ASL

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for Limnology Inc

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AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.

The Australian Society for Limnology Inc. (ASL) is an association of over 500 people with professional or amateur interests related to Australian inland waters. Since its inception in 1961, the society has played an important role in fostering limnology in this country. The ASL promotes liaison between limnologists in academic, government and private institutions and has a vested interest in the conservation of aquatic and related resources. Annual conferences are held near centres of limnological interest, and the programme includes scientific sessions, field excursions and social activities.

The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

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Membership Infomation and a list of the Regional Executive Officers can be found at the back of this Newsletter

NINTH TAXONOMIC WORKSHOP

18 - 20 FEBRUARY 1997

TRICHOPTERA, EPHEMEROPTERA

CHIRONOMIDAE*, PLECOPTERA*

GUEST SPEAKERS:

David Cartwright, John Dean, Peter Cranston,

Ros St Clair, Phil Suter, Cathy Yule, Alice Wells

Cooperative Research Centre Freshwater Ecology

*The workshop has been extended to three days, to include an extra day with sessions on recent taxonomic research (Chironomidae and Plecoptera) undertaken for **Australian Water Technologies, Sydney.**

VENUE AND DATE: The workshop will be held at the Murray-Darling Freshwater Research Centre (MDFRC) Ellis Street, Thurgoona, via Albury NSW, from the 18 to 20th February 1997.

CONFERENCE ENQUIRIES: John Hawking, MDFRC, PO Box 921, ALBURY 2640. Phone: 060-582300 or Fax: 060-431 626.

REGISTRATION: Participants must register, and include fee by **Friday 14 December 1996.** Please make cheques payable to The Murray-Darling Freshwater Research Centre.

COSTS: A registration fee is charged to offset the cost of reproducing the taxonomic keys, travel and accommodation for the guest speakers, lunches, morning and afternoon teas. Registration Fees as per the registration form. Identification Guides will be produced for each session and are included in the registration cost. The guides from the workshop will be available for purchase by non-attendants.

ACCOMMODATION: Accommodation is the responsibility of the participant. Listed below are motel, hotel and caravan park accommodation near the Centre. All prices listed are per night.

Thurgoona Country Club Motel, Evesham Place, Thurgoona. Phone 060-43 1666. Single and Twin Share, both $78. Within walking distance of the MDFRC laboratory.

Sodens Hotel-Motel, Cnr. Wilson and David Streets, Albury. Phone 060-212 400. Motel: Single $35 and Twin Share $45. Hotel: Single $25 and Twin Share $35. A light breakfast is included in both the Motel and Hotel prices. Soden's is approximately 8km from the MDFRC laboratory.

Siesta Motel, 416 Wagga Road, Lavington. Phone 060-25 4555. Single and Twin Share, both $77. The Siesta is 5km from the MDFRC laboratory.

Trek 31 Tourist Park, Hume Highway, Lavington. Phone 060-25 4355. Cabin with ensuite, Twin Share $45. Van with ensuite, Twin Share $38. Van without ensuite, Twin Share $32. Additional persons can share the accommodation, $5 per additional person and $2 per additional child. Trek 31 is 4km from the MDFRC laboratory.

SEND COMPLETED REGISTRATION FORMS TO:

John Hawking,
MDFRC,
PO Box 921,
ALBURY 2640.
Phone: 060-582300 or Fax: 060-431 626.

by Friday 14th December 1996

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Material for publication in the December 1996 Issue of the Newsletter should be sent to the Editor (see back pages) before 31st December 1996.

Long articles should be forwarded as unformatted text on a disk or via email.

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EDITORIAL

aaaaaahhhhhh that is the scream of someone who has just survived another Honours Handup week. I always feel that being in the Department during the final Honours week must be somewhat similar to appearing on 'Sale of the Century' (you are asked lots of unrelated questions in very quick succession). Alas I must never answer them correctly as I have never won a snazzy sports car with fluffy seat covers!!!

This Issue of the ASL Newsletter is very very late and all ASLers have my sincere apologies. It has been difficult getting everything together post-ASL Congress and just as I managed to coordinate the chaos - Honours writeups descended upon me. So this has grown into a bumper issue with lots of input from everyone - you must be all inspired after the Conference. Thanks to those who sent information and articles.

The December Issue of the Newsletter will contain the 1996 Membership Directory so I hope you have all sent the changes to your details to Margaret Hart! The deadline will sneak up on you (and me) so send articles soon.

DEADLINES FOR THE NEWSLETTER IN 1996 & 1997

The following are the deadlines for remaining issues of ASL Newsletter Volume 34 and for all issues of Volume 35.

Volume	Deadline
Volume 34	
September 1996, *No.3*	30th September 1996
December 1996, *No 4*	31st December 1996
Volume 35	
March 1997, *No. 1*	31st March 1997
June 1997, *No. 2*	30th June 1997
September 1997, *No. 3*	30th September 1997
December 1997, *No. 4*	31st December 1997

FROM THE PRESIDENT

FROM THE 'OLD' PRESIDENT

My time as President is drawing to an end, and in my last Report I'd like to recapitulate on the achievements that the Society has made in the past year and then to outline some directions that it might take in the next. My predecessors commenced a transition in the ASL, in which the Society adopted a renewed, invigorated and outlooking perspective on the world. We've continued that process, with notable achievements over the past year including:

- ASL hosting the LWRRDC-funded Biomanipulation Workshop
- representation with observer status at the Brisbane Ramsar meeting
- our making a financial contribution towards INTERCOL V
- agitation to get ASL recognized in the formulation of a Federal wetlands policy
- ASL publishing its own position on wetlands
- our participating in a ACF analysis of the state of the Murray-Darling basin
- updating of our aged membership brochure
- increased interaction with the mass media, especially radio.

The important question facing the Society, however, is "Where to in the future?". I'm hopeful that we may be able to address this question in the workshop dedicated to the issue at the Berri congress. Some ideas that I have on strategic goals that the Society might consider are:

- what should the ASL aim to be? Surely it must aim to advance the science of limnology via education, research and better management. But how might we best do this?
- might the ASL aim to contribute more to a greater awareness in the Australian community of the limited and often parlous nature of our water resources? Should we provide a forum for discussion of contentious issues and the dissemination of informed limnological viewpoints? Do we wish to publicly demonstrate that many of our current management practices are unsustainable, and that there are yawning chasms in our scientific understanding of many ecological processes? If so, we had better be prepared for a significant shift in the nature of the Society.
- should we aim to foster better international links? That the Biomanipulation workshop has allowed us to invite three distinguished foreign visitors is a move in this direction. Could we not plan better links with our limnological cousins across the Tasman Sea and across the Torres Strait?: just as we've had collaborative congresses with the ASPAB in the recent past, why not plan for future ASL congresses to be held in Papua New Guinea or New Zealand now and again? Why not advertise in European and North American circles to try to get some of them to come Down Under to our meetings? After all, many of us make pilgrimages to Europe or the USA.....

- how do we develop an index of whether the Society is moving in the direction and pace at which its members want? The nexus between the membership and the Executive is central but fragile: perhaps we need an even more representative and involved Executive, if the Society is to take courageous (in the *Yes, Prime Minister* sense) actions in the future and if it is to adopt a more aggressive public stance.

Paul I Boon
ASL President 1995/96

FROM THE 'NEW' PRESIDENT

Firstly, a well earned bundle of praise for the organisers of the Berri Congress. Thanks very much for your energy and perseverance in getting us there and back with a great time in between. I'm sure that the entire group of participants appreciated your efforts - take a well earned rest.

Secondly, thank you to past members of the Executive Committee with Margaret Brock finishing her term as past-President and Paul Boon moving onto the position of past-President. Margaret and Paul are two of the noisy band of people that continues to actively challenge ASL over it future (and past?). Margaret made the move to involve us in the national biodiversity and wetland debates. Paul carried this further with support for active participation in national and international fora. The release of the wetland policy in time for the Ramsar Convention Conference was a major step forward in our transition from a great club of enthusiastic limnos meeting on weekends to an even bigger club of enthusiastic limnos meeting during the week for two and half days and wondering about adding a further half day. But, it was about much more than that - it showed that a small group of (representative or at least active) ASLers could rapidly compile and publish a coherent message on wetland conservation. This may not present a model for further such statements, but it does present an example of cooperative action and influence by ASL and it is a long way from David Mitchell's early 1980s observation about limnos doing little more than sit in boats and mutually masturbate (I wonder if this was an accurate description?).

The latter raises the important issue of the future of ASL. Peter Cullen must have been amazed in 1995 that his two motions on controversial water issues were accepted so readily by the ASL membership at the AGM. This had not been the case when other national water issues were raised at previous AGMs. Paul raised these issues again in Berri during a special workshop to canvas ideas on the future of our Society. We heard a few tried and trusted voices from established members and some from newer younger and older members. George Ganf eloquently called for our past values to be maintained. But, it was Kerri Muller who made what was to me one of the most valuable statements by reminding the Society that perhaps we did owe something to society in general. This theme was very strong in David Mitchell's personalised and searching Jolly Award speech. Keith Walker demonstrated in his sophisticated Jolly Award address that our scientific information is needed and can be used for management planning. But, the question for ASL is not one of how we individually use our science, but how ASL advances the use of our science in society for maintaining those limnological sites, functions, products and attributes that we (mainly) value. (I have hopped over the question about whether or not we should do this and hope I do not have to return to it.)

So, post Berri we have a new Executive and a motion asking this august band to develop some ideas on the possible way ahead for ASL in a world where inland waters are still being devastated. Can they do it? Obviously not without your input (but see a

later note on this) and only if you want it. If you want the friendly little club and nothing more then please say so. If you want a more active and professional scientific society able to participate in governmental debates then please advise us how this can be done. If you want a fully accredited scientific association or a lobby group then be ready to contribute.

Other issues to address include the move into the ethernet with Michael Douglas setting up a trial ASL newsgroup. Contact Dougo if you wish to subscribe to this. We have offered a small sum of money to support the lobbying activities of the Australian Wetland Alliance. Arid zone wetlands may also be the target of an ASL policy statement. The future (fate?) of CSIRO journals and FASTS will again occupy our time. SIL is coming soon. Then we have the triad-gang happily planning the 36th Congress (Who knows where the first conference was held?) and whats the betting that a musical fest will feature (with line dancing?).

I liked the friendly club atmosphere of the first Congress I attended in 1976. But it is now 1996; where will we go in 1997? My option may not sit comfortably with you so please respond to requests for comment on the options paper being prepared (well, at least planned) by the policy sub-group.

Max Finlayson
ASL President 1996/97

PRATTLEBUT, SCUMOUR AND RUTTLE

TASMANIA

Dr Jean Jackson [Jean.Jackson@zoo.utas.edu.au]

University of Tasmania (Zoology):

Freshwatery people in zoology are now meeting for gossip and therapy sessions about every weeks. Surprisingly, meetings are held in the tearoom not the pub. **Laurie Cook** and **Alastair Richardson** have returned from their trips away to WA and The World respectively. Laurie was straight back into field work during the coldest September weather ever, with **Martin Read**. They battled deep snow drifts in Peter Davies 2WD ute with an identity crisis (it's often used as a 4WD). Martin set a new fashion standard for the Bronte Park hotel, being forced to wear waders in the restaurant after abandoning his new and expensive walking boots on the highway by throwing a stick for them to chase then driving off without them. Luckily some kind person has given them a good home. Meanwhile, **Peter Davies** and family were working on their tans at Surfers Paradise, courtesy of his carpet shop.

A statewide RIVPACS model is in the pipeline, using MRHI data as well as data from **Peter Davies'** hydro and RFA (regional forest assessment) projects. Peter's workforce is being reduced to **Will Elvey** and **Laurie Cook**, as **Paul Lewis** is going to WA and **Claire McKenny** will be working with **Leon Barmuta**. Leon and **Roy Swain** are starting a project on macroinvertebrate predator-prey interactions in streams, funded by an ARC small grant. **Brita Hansen**, doing honours with **Alastair Richardson** on taxonomy of Parastacoides, has made a great leap forward for animal ethics, by getting her crayfish to sacrifice THEMSELVES for DNA analysis! **Jean Jackson** is busy developing draft caddis larvae keys and learning Spanish before skiving off to Chile for the Southern Connection meeting in January.

Dept of Primary Industry:

Tom Krasnicki has heroically finished processing all the MRHI samples. **Dave Oldmeadow** often works at head office, playing with data and helping write the state State of the Environment report. Dave therefore misses out on lunch at Angie's, the dining room at the local geriatric hospital where Tom, Henry et al have lunch (really). **Henry Maxwell** (my gossip source) has finished his report on recovery of the Great Forester River after a pyrethrum spill, and is now working on a comparison of sampling methods (quantitative cf rapid). **Mark Nelson** and **Nick Probert** continue work on habitat assessment and environmental flows. A project on water quality and environmental flows in the Mersey River below Lake Parangana is being planned by a cast of thousands including IFC, HEC, DPI and **Peter Davies**. **Sarah Munks** has

completed "A guide to riparian vegetation and its management" and she is now working on platypus biology in a very cold place near Cradle Valley. Rumour has it that several wet jobs may be coming up at DPI soon.

Inland Fisheries Commission:

A new job on native fish conservation has been offered to **Dave Crook**. **Leon Barmuta** will probably be looking for a new PhD student to take Dave's place (and scholarship). No other news received from IFC yet.

New South Wales

Apologies to those I didn't get to contact for NSW scuttlebut this time around and to those I did but gave you little time for preparation of reports. Please send me an email (chicko@mdfrc.canberra.edu.au) if you wish to contribute to the next newsletter and I will put you on my list.

University of Sydney

susan@anatomy.su.oz.au

Susan Adams has completed a M.Sc. from Dept. Anatomy and Histology, University of Sydney - thesis title "An X-Ray Microanalytical and Secondary Ion Mass Spectroscopy Study of Granular Concretions in Hyridella depressa to Determine their use as Bioindicators of River Health". These freshwater mussels were observed from the magnificent Lake Burragorang and upper Hawkesbury River areas and it is with sadness that she now leaves this work as she has chosen to work in a different field for a PhD ie: Reproductive Biology.

Murray-Darling Freshwater Research Centre

from: Alan Chick (chicko@mdfrc.canberra.edu.au)

Mike Copland and his programme "A Testing Time for Water" has won the Gold Award in the Scientific and Research category in the NSW Rivercare Awards. The programme is sponsored by the Murray-Darling Basin Commission, but Mike works from the Murray-Darling Freshwater Research Centre and involves schools and communities in the Basin. "A Testing Time for Water" uses the staff and facilities of the MDFRC to train and support teacher/student teams from high schools in water quality testing projects which focus on a local water quality issue. There is an international exchange component where teams from the programme have the opportunity to spend time in the Tennessee Valley in the USA, while equivalent teams supported by the Tennessee Valley Authority get the chance to visit Australia. In both cases the teams spend their time looking at water quality problems and successes and

so gain a valuable insight into how another country manages these issues. The Campaspe Environmental Flows project is almost full-steam ahead. **Alan Chick** and **Ian Rutherferd** (Monash) have initiated the macrophyte and sediment aspects of the project. **Paul Humphries** and **Luciano Serafini** have completed their first year of larval fish sampling and the boys from DCNE at Snobs Creek are continuing to monitor the big fish. We welcome **Alison King** into the project. Formerly of CSU and elsewhere she hopes to shake off the stigma of working with carp by doing some really exciting bug-picking. We are also close to welcoming the last member of the team, but at the time of writing contracts have still to be signed. Nevertheless the invertebrate side of the project should be up and running within months if not weeks. The Temporal and Spatial team of **Rob Cook**, **Chris Knight** and **Garth Watson** are sorting like mad to catch up with all the flood/post flood/flood invert. samples they have collected from the Ovens billabongs. As soon as all bongs become discreet and access to the floodplain is OK they will complete the final invert., fish and water chem. sampling and wind the project down. **Alan Chick** and **Judy Frankenberg** will complete the final vegetation survey of the bongs and also survey transects across the floodplain some time in November if the weather holds. The intrepid small mammal trapping crew will also carry out the final survey in Nov/Dec. **Greg Raisin** has accepted the newly created position of Riverine Environment Manager with the Department of Land and Water Conservation for the Central West Region of NSW. **Greg** will be based in Orange and will be responsible for issues such as water quality, riverine habitat, riverine corridors, environmental flows, carp, weeds etc along the Lachlan and Macquarie River systems, including the Macquarie Marshes and the Cumbungi Swamp. He is interested in talking to individuals and/or groups interested in conducting research projects in this region. The environmental problems are immense and our understanding of the systems is generally limited, but the challenges are exciting for those game enough to have a go. Greg will start at DLWC on the 18/11/96, and can be contacted on: ph. 063638278 and fax. 063613839.

University of New England

from: Margaret Brock

We are all still licking our wounds from the great hail storm which descended on Armidale while most of us were at ASL in Berri. The violent destruction of glasshouses meant that many of our seedbank and aquatic plant experiments got bounced around considerably. We have retrieved what we can and redesigned what we can't and the rest we just swear about a bit when things get quiet. Well long term trials were never meant to be were they. And we all know that glasshouses aren't representative of what happens in the field anyway! It seems to have been constant conference time over the past few months. **Michelle Casanova** presented two papers at The International Charophyte Meeting in the USA in July. Between us, the aquatic botanists managed to present 6 papers (all different!) at the INTECOL Wetlands Conference and at ASL. And that's not counting what **Andrew Boulton's** students have managed (at least another 2 papers). Visitors are high priority this week: we have

a charophyte contingent, **Monique Fiest** from France and **Adriana Garcia** from Wollongong to join **Michelle Casanova** in the continued search for the elusive and maybe extinct charophyte *Lychnothamnus barbatus*. (All just a good excuse for a spring field trip). And next weekend we will have **Jan Kvet** from the Czech Republic visit us. It is the silly frantic season again (no not Christmas!)- honours thesis time, field survey time, and set up all those things we planned to do sometime in 1996- time, and end of semester time. I think we will all have survived when you see this in print. **Margaret Brock's** new Aquatic Botany Unit will have run for the first time: our Aquatic Ecology Unit (**Andrew Boulton, Rod Simpson** and **Margaret Brock**) for the second time and Andrew's Limnology Unit for the first (and hopefully only) time in "lecturer present in spirt not form" mode.

Narrandera Fisheries Centre

from: Craig Schiller

Field-work for three major research projects involving the Narrandera Fisheries Centre (NSW Rivers Survey, NRMS Native Fish Recruitment study, and the ANCA Trout Cod) is now complete and data analysis and report preparation are well-advanced. Several medium to large projects should be getting underway early in 1997, but at the moment Narrandera is a tad quieter than has been the norm. (It was at this time last year that an intrepid NSW Rivers Survey electrofishing team were the subject of a cowardly bombing attack by fun-loving locals in the Hilston area... the good old days of clean and simple fun). On the fish breeding side things are very busy and will remain that way until the end of summer. One of the coldest springs on record had us guessing as to when was the best time to start breeding the endangered trout cod. The first pond dropped revealed two out of four of our biggest females had already released their eggs with no males present, bummer. Action stations and the other ponds were quickly brought down. A total of 23 females were injected with hormone but many did not ovulate at the optimum latency period, resulting in a poor hatch rates in most egg batches. Murray cod spawning was completed by the 18th of October, with most fish spawning exactly on schedule. Broodstock collection in a flooding Murrumbidgee River proved interesting and resulted in the capture of some recently spawned Murray Cod and the observation of scores of spawning golden perch, all from water less than 17°C. Unfortunately collected broodstock turned out to be quite 'expensive' as half of the sampling gear was stolen in the process. Clam shrimp and fairy shrimp, always a problem in the rearing ponds at Narrandera Fisheries Centre, are about to be attacked using a new 'secret' weapon. The success or otherwise of 'operation shrimp' will be reported later.

VICTORIA

Royal Botanic Gardens, Melbourne

from: Tim Entwisle [TJE@rubens.its.unimelb.edu.au]

I must report (since no one else will) the birth of a new Australian endemic family of freshwater red algae. **Tim Entwisle** is one of the proud parents (along with fellow phycologists in North America). We have always known that Psilosiphon was a bit weird: its closest relatives are in the Northern Hemisphere; the five known localities are between 30 minutes and three days walk from the nearest vehicular track; and it produces adventitious plantlets (or alglets) rather than having sex. Ultrastructural and molecular probing by overseas colleagues have simply confirmed our suspicions. The olive-green to blackish, wiry tufts (1-15 cm long) are locally abundant in scattered localities in south-west Tasmania, and in one stream in Barren Grounds Bird Reserve, New South Wales. Look out for it on your next phycological foray. In March, I endured a gloriously sunny and phycologically frenetic week with Australian Geographic at Bathurst Harbour, south-west Tasmania. Via helicopter drops and boat cruises, I found plenty of Psilosiphon and other freshwater red algae in the glimmering heathland streams.

In a quirky translocation, I am representing the National Biodiversity Council on the New South Wales Biological Diversity Advisory Council. Along with **Gerry Cassis**, I am able to make sure the little things in life become big things in government reports. By the time this newsletter hits your desk the NSW Biodiversity Strategy will have been circulated for public comment (and you will have done so won't you).

Jason Sonneman (CRC for Freshwater Ecology, Monash University), **Simon Lewis** and I are close to completing our colour guide to the freshwater algae of Australia. The publication schedule is being driven by **Geoff Sainty**'s desire to get out there and get the guide wet. We hope to print in November and have the guide ready just in time for...?Easter. Just remember, it will include most macroalgae, the most common microalgae, and all to genus level only. Please note: as much as we would like to, we cant write a key to the freshwater algae of Australia. **Tyler** and **Vyverman** are chipping away at an interactive key but even that can hardly go to species level. The recently published bibliographic checklist, for example, is an uncensored list of all the names reported from Australia. Many of these (even from the pearly white literature) are unreliable and uncheckable. That list is a starting point for taxonomic study...desperately needed taxonomic study, so that we don't keep slapping on European names of best fit. You can now identify an algae from any old Northern Hemisphere flora then check to see if the name has been reported from Australia. If it has, you should check the cited literature and make your own assessments (you'll have to search further to conform with current nomenclature). If it hasn't, you may have found a new record. It is the best we can do: I wish it was a census or a fully cross-referenced synonym list or a key, but it aint.

On the path to this Holy Grail, **Simon Lewis** ploughs through literature records and herbarium material of Zygnemataceae in a quest to bring at least one family out of the mire. At the Asian Pacific Phycological Forum in Sydney (next week as I write) we'll display the results of Simon's work as well as plenty of lovely snaps from Tasmania.

PS: I must transfer all blame for the scattering of irrelevant illustrations through the Bibliographic Checklist to the publisher.

WATER ECOscience

from: Alistair Cameron

Danny Vertessy continues to assist me in the final stages of the MRHI project and with continuing collaboration with the EPA the project remains on course. YEA!! **Phil Mitchell** and **Julia Hillman** have been undertaking fieldwork and sample sorting for the MDBC macroinvertebrate monitoring program. Phil with the assistance of Julia, **Clare Putt** and **Karen Grumley** has also been working on the monitoring program associated with the replacement of the weir at Torrumbarry. **Peter Cottingham** is currently working on the Werribee Water Quality Strategy. **Lance Lloyd**, **Jodie Loone**, **Suzie Moore** and **Kelly O'Shanassy** are seeing the fruits of there hard work implemented with the restoration of Lake Mokoan. Further team efforts by **Nick O'Connor**, Suzie, **Sonia Talman** and **Kylie Lewin** are seeing the end of the Ovens Pesticide Project approaching. **Catherine Sandercock** has left us for a few months travel in the Rockies, Alaska and Vietnam but not before completing the major Victorian storages report with the assistance of **Liz Dudley** and **Brett Smith**. Speaking of Alaska, Sonia has recently returned from a working holiday where she studied the effects of logging techniques on stream productivity in salmon streams in the Tongass Forest, Sth Est Alaska. **Frances Cannon** has recently completed an investigation of urban streams within the Melbourne airport boundaries. The correlation between the completion of the FAC report and her engagement is still to be determined. The Lake Boga management strategy has also been completed by Peter, Lance, **Tony Schalken** and **Majella Hedger**.

SOUTH AUSTRALIA

Department of Zoology, University of Adelaide

Lest readers of the ASL Newsletter think that the only limnology pursued at the University of Adelaide is confined to the River Murray Laboratory and the Department of Botany, attention is drawn to the endeavours of several limnologists in the Department of Zoology who are not part of the RML.

Bill Williams has recently returned from a trip to the UK (Institute of Freshwater Ecology and Freshwater Biological Association) and Russia (St Petersburg and Moscow). Awaiting his return was a pile of manuscripts for the three journals he edits: (1)Lakes and Reservoirs; Research and management, (2) International Journal of Salt lake Research, and (3) Verhandlungen int. Her. Limnol., several paternity suits, 'flu, and an extended period of jet-lag (after two weeks of continuous daylight). Bill has been singing the praises of his Russian hosts; says the best thing about Russia is the Russians (so much for the Hermitage!).

John Bradbury, working with **Bill** on the freshwater amphipods of Australia, has also been away. This time not so far: he went to a workshop in Canberra on the use of the Delta system in taxonomy. Like all good taxonomists, John is never satisfied with the amount of material at his disposal. So, if you have any freshwater amphipods you want identified (no charge), now is your chance. Send them to him.

A number of postgraduate students are supervised by Bill (all in third world conditions at present). **Angel Ghassamzadeh** is writing up her thesis on the ecology of salt ponds north of Adelaide. **Tim Mowbray** is studying the changing conditions of Lake Corangamite in Victoria (we don't recognise State borders in this part of the world). **Amy Blaylock** and **Claire Byles** are studying macroinvertebrate communities and the riparian vegetation of Sturt Creek, Adelaide. This river, despite its urban and suburban location is a good deal less degraded than all nearby rural streams. For the most part, the latter have been thoroughly pigged up by the local cattle! **Nicole Outram** is looking at the ecology of constructed wetlands in Adelaide.

Finally, a Danish student, **Lars Thuesen**, arrives in July to work for six months with Bill on the relationships between density, salinity and temperature in saline waters. It is rumoured that he speaks English.

So, despite reports and indications to the contrary, Bill and his coworkers in the Dept of Zoology have not sunk beneath the neuston since his 'retirement' and important limnology continues to be done in Adelaide in areas of the University beyond the boundaries of the RML and the Dept of Botany.

Department of Botany, University of Adelaide

from: Kerri Muller

Everything is cruising here - the weather is fabulous, **George** is in a good mood!! (everyone loves his students) and we all survived **Georgey's** birthday party (those of you who saw us hold up the bar at Berri will not doubt this). Another new Honours student has joined our happy clan - **David Probert** (no dick jokes, please!) - he is looking at something to do with leaf area indicies, salinity and the MFP - aside from being allergic to his site (or so he says) things are happening. **Marcus Cooling** is madly tapping away on his keyboard writing the last few chapters of his thesis which will be submitted this year - Allez, allez!! He and **Sean Geary** are seeking employment - so please give generously. **Sean** is also working for **Justin Brookes** - who seems to have a bigger pay-roll than Murdoch. **Justin** is currently looking at the interactions between vesicle volume, carbohydrate storage and nutrient status in *Microcystis*. The other alga - **Karen Westwood** - is - like all good PhD students - diligently plugging away at her literature review (NOT), otherwise she is arguing and going to Bach concerts - excellent initiation into the Ganfian tribe. **Sean White** - who no-one's met because he is not a member and doesn't come to conferences - is in the Gallery Coffee Shop sampling short blacks - the joys of inner-city campuses! **Michelle Bald** - another avid Bach fan is designing traps for *Azolla* at Willunga as part of a *Triglochin* shading experiment and setting up competition experiments in the glorious Botany ponds - she's afraid of catching things from the sewage (trust me it's not fun). **Kay Morris** has lured **George** off to Bool Lagoon to study the effect of salinity regimes on macrophyte performance and has moved into the boy's room to make room for our fabbo new computers. **Marcus Brownlow** was chuffed that everyone loved his Abstract book at Berri and in between being harrassed by undergrads and fixing our computing problems he gets 10 seconds a week to write his thesis. **Stuart Blanch** can talk about himself in the Zoology prattle butt so that just leaves **me** - and I don't want to talk about it except to say I can drink **Karen** under the table.

STOP-PRESS: the proposal to irrigate cotton at Windorah on Cooper's Creek was knocked back by the Queensland Govt. this week which is WICKED!!!! and restores our 'faith in the victory of common sense over short-term economic gain' *S. Blanch.* Thanks to all that signed the petition at Berri we are sure it helped.

Australian Water Quality Centre (
a business unit of the SA WATER Corporation)
based at the Bolivar Laboratory.

Aquatic Ecology Macroinvertebrate Report (from Peter Schultz)

At the EPA our old colleague **Peter Goonan's** health continues to improve and he in increasing his workload as fast as OH&S will allow.

New projects started include biomonitoring of two new WWTP discharges into waterways and the extent of impact from an acid mine tailing discharge on a stream system. A number of reports are being produced on many projects initiated by Phil Suter.

A change of personnel has seen **Trevor Green** appointed to the Technical Officer position with the sub unit. This has greatly helped field work and he is making rapid progress with the taxonomy. A work experience project by **Peter Horne** has allowed us to curate, catalogue and photograph our voucher collection. This will allow us to use it more easily and has highlighted the gaps in the collection that we can fill at this time when there is an abundance of sorting in progress.

MRH news is dulled by the continuous sorting of the final survey from 1995. **Chris Madden** and the new appointee **Vladimir Tsymbal** both attended ASL and the workshop in Canberra in October. They are both looking forward to the resumption of sampling next Autumn. The Model based on the results from the earlier survey makes interesting reading.

NORTHERN TERRITORY

NT Power and Water Authority

from: Jane Suggit

The most exciting news to hit the Water Quality Branch recently is the transfer of our group and the rest of Water Resources Division out of PAWA and into the Department of Lands, Planning and Environment. As you can imagine this move is welcomed as most of us have more contacts in LPE than we do with the rest of PAWA. Waterwatch has a new face. **Steve Sly** who was temporarily filling in the position has been posted to Alice Springs just as our new Waterwatch Facilitator arrived. Our Branch would like to welcome **Sharon Rixon** (ex Land & Water Conservation NSW) who has just moved from Sydney to Darwin. **Sharon** is presently gearing up for Waterweek with help from community Waterwatch co-ordinators and **Kate Gowland** who has flown up here to give a hand. In August, **Lynne Powell** organised all of us to participate in a "Water Quality Information Day" for landholders in the Mary River catchment. A

series of seminars were given on water quality and then a "hands-on waterbugs" activity was held for attendees. Monitoring River Health is in flat-out mode as field work is approaching a frenetic finale. A carton of green cans and champagne will be the basis for a post fieldwork MRH fling on 30 November! All welcome - that includes Jabiruvians too! So with good rain showers falling across the Top End and a noticeable edginess developing in the croc population when out on field trips - it all points to one thing. Wet season is on its way.

WESTERN AUSTRALIA

Centre for Water Resarch, University of Western Australia

from: Carolyn Oldham

I think it has been quite a while since most of you heard much news in this newsletter from CWR, so I thought I would try to give a summary of our recent activities.

Over the past 5 years we have slowly been building up a team of water quality researchers who act together with and compliment CWR's traditional strengths in the areas of hydrodynamics and surface and sub-surface hydrology. At a recent meeting we noted that almost without us realising it, we have built up a team of almost 20 staff and postgrads (out of a total of 60 researchers at CWR) who are working in areas related to water quality.

Staff who are working in this are include **David Hamilton**, (with a strong combined ecology and modelling background) who is leading a multi-disciplinary, cross-institution team of scientists who are working at developing a 2D and 3D hydrodyanamic-ecological model of the Swan River estuary. In particular the model should give us an idea of external and internal cycling of nutrients, their transport and the eventual effect on phytoplankton blooms in the estuary.

Carolyn Oldham (with a combined chemistry and hydrodynamics background) joined CWR 2 years ago and is developing a research group looking at contaminant dynamics with particular attention to the sediment-water interface. Her group is concentrating on urban contamination and heavy metals in estuaries, wetlands and surface runoff and focussing on the interactions between physical and chemical processes ocurring at that interface.

Marie-Paule Bonnet (with experience in blue-green algae dynamics and also numerical modelling) is currently a post-doc with Jorg Imberger. She is setting up a 3D coupled hydrodynamic and ecological model of Lake Burragarong, NSW. She has been able to model large scale transport of algae under varying wind conditions which has highlighted the horizontal patchiness that exists in such systems.

PhD students include **Brett Wallace** (supervised by **David Hamilton**), is a Masters student working on CWR's DYRESM model incorporating both zooplankton and fish into the Water Quality module. He is working closely with the Limnology Centre at the University of Wisconsin. **Rajendra Kurup** (supervised by **David Hamilton**) is also a Masters student working on the 2D hydrodynamic-water quality model of the upper reached on the Swan River. **Mark Bailey** (also supervised by **David Hamilton**) has just completed his Masters investigating the interactions between the hydrodyanamics, light and phydoplankton dyanamics in a shallow Perth wetland. **Yuan Yi** (supervised by **Carolyn Oldham**) is develping a model of urban surface runoff and its effect on heavy metal distribution in drains and the Swan River.

Their are of course also numerous Honours students working on wetlands, lakes and estuaries in both Western Australia and other states. I hope this has given you a feel for what we are up to here at CWR and I will try to give you an update of these and other projects in future newsletters.

Murdoch University

from: Kerry Trayler

With the dust barely settled on INTECOL, a certain diehard conference organizer ventured off to ASL SA-style. The more mortal types kicked off for a week or so in the south-west, and those that still had energy toured onward with INTECOL wetland-watchers.

The fallout from the conference has meant that we've been visited by a number of eminent wetland scientists of late. **Dr Yos Verhoeven** who is from Utrecht University in The Netherlands extended his stay in Perth as part of his sabbatical leave. He is making a comparison of wetlands in different countries, which involves measuring plant growth and assessing soil and water properties at a number of contrasting sites.

Also in our midst, was a sprightly **Dr Ralph Brinkhurst**, who spent two fun filled and somewhat wet weeks touring worm hangouts in the far south-west with **Adrian Pinder**. No doubt the two of them will publish a myriad of papers on the taxonomy of our worms in that region - to the dismay of the lumpers in our realm!

Freshwater Fish Biology
(Prof. Ian Potter, Dr Howard Gill, David Morgan, Erika Fairhurst, Kate Trinajistic)

Dave, Howard and **Ian** have just submitted a report to the Water and Rivers Commission detailing the distribution of freshwater fishes from Walpole to Albany, this supplements the report on the distribution of fishes between Collie and Walpole. The combined reports will be submitted in the not to distant future to the Western Australian Museum for publication as a Supplement to the Records of the Western

Australian Museum. Work on the distribution and habitat requirements of fish (and frogs) in the Gingin area has recently started and yet again the funding from the Water and Rivers Commission is greatly appreciated.

Ian, Howard and **Kate** continue to work in collaboration with north American colleagues on the phylogeny of the lampreys. An update of the paper that was presented in New Orleans at the American Society of Ichthyologists and Herpetologists Annual Conference will be presented at the upcoming Early Vertebrate Evolution and Palaeontology conference in Perth next June.

Dave and **Erika** continue in the long grind towards completing their Ph.D's, while **Kate** having almost left the fold spends most of her time looking at fossil shark scales.

QUEENSLAND

from: George Lucacs

Australian Centre for Tropical Feshwater Research (James Cook University)

The song generally remains the same here at the ACTFR, with most of us either trying to write up theses or remaining busy with existing projects. However, we have had one significant departure with **Paul Clayton** leaving the sunny north for the colder climes of Warwick/Toowoomba. He has joined **David Moffat** at the Qld Department of Environment to work on wetlands (recovery after drought) in the south-west corner of the state. I'm sure he'll equip himself well (especially with all that dunder experience), and we wish him all the best. **Damian Burrows** (ex- USDA Biological Control) is Paul's replacement, and we will ensure he also gets a taste for dunder (and Army firing ranges, crocodile infested rivers, etc). Welcome Damian and good luck.

Richard Pearson continues to be the acting HOD of Zoology and the Director of ACTFR. I'm still working on a handful of projects; including constructed wetlands for nutrient control of irrigation tailwater, and together with **Barry Butler** (ACTFR), **Alan Pomeroy** (JCU) and **Mark Dawson** of the Sugar Research Institute (SRI), the use of a (full-scale) constructed wetland to treat a combination of sugar mill effluent and municipal waste. **John Faithful** continues his study of the Burdekin Dam and hopes to commence writing his PhD thesis in the next couple of months. **Zoe Rosser** is apparently somewhere on Magnetic Island (desperately?) trying to write-up her PhD on the role of disturbance on macroinvertebrate community structure. **Jacqui Nolen** has been preoccupied with things maternal over the last year or so (it was a bouncing baby girl), but is now back working on the stream classification project in the wet tropics. **Niall Connolly** remains busy with his mesocosms (now showing at Paluma) to investigate the effect of sediments, nutrients and dissolved oxygen on macroinvertebrate communities. Congratulations also to **Faye Christidis** who has

recently started her PhD with a LWRRDC post-graduate scholarship on the taxonomy and ecology of the Leptophlebiidae (mayflies) of tropical north-eastern Queensland.

Depts of Zoology, Tropical Plant Sciences and Tropical Environmental Sciences and Geography (James Cook University)

Ross Alford (Zoology) informs me that he is continuing his investigations into the breeding phenology, behaviour, and ecology of savannah woodland frogs. His current work is centred on the effects of a variety of maternal investment strategies on species interactions among tadpoles. All 72 cattle tanks are expected to be boiling with tadpole activity this summer. **Steve Richards** (Zoology) is nearly finished with his long-term (but part time) Ph.D. project on the effects of disturbance on a rainforest stream tadpole assemblage, and the interactions of those tadpoles with predatory invertebrates. **Kay Bradfield** (Zoology) recently completed her Honours, looking at whether the distribution of frog larvae among rainforest aquatic habitats reflects the ecology of the frog larvae themselves, or other factors. She concentrated on one species that breeds in streams, and one that breeds in pools. Larvae of both species did better in both growth and survival when raised in pools, leaving open the interesting question of why frogs bother with streams. Kay has now started a Ph.D., but has defected to terrestrial ecology. **Michael Crossland** (Zoology) has submitted his Ph.D. on the effects of aquatic stages of cane toads on native freshwater fauna; it turns out that all fishes he tested are smart enough to avoid eating toad eggs, hatchlings, and larvae. Most invertebrates also either avoid them or are not affected, but tadpoles of many native frog species seem to be very badly affected.

Bob Congdon (Tropical Plant Science) continues his involvement in water quality monitoring of the Burdekin River Irrigation Area and is still waiting for me to give him chapters of my thesis (obviously a tolerant and patient man - grovel, grovel). **Paula Randall** (Tropical Plant Sciences) completed her honours on *Eleocharis*/paragrass competetion mid-year and has moved to Brisbane.

Paul Mathewson (TESAG), **Stephen Skull** (ACTFR) and I are involved with biological survey and mapping of the vegetation and wetlands of the Townsville area. The area contains a variety of wetlands with many intermittent and seasonally flooded streams, several large palustrine swamps and a diverse mangrove/saltmarsh community. Several of the artificial freshwater waterbodies are also of interest, having little weed invasion and being dominated mostly by *Nelumbo lutea*, *Nymphaea* spp., and *Eleocharis dulcis* - which makes for great photos).

Central Queensland University

Leo Duivenvoorden is still away on study leave (until Jan/Feb 1997), so I'm expecting a long and vibrant report on the happenings at CQU on his return.

Queensland Department of Natural Resources

Howard Gibson tells me that the Artificial Wetlands Co-ordination and Advisory Committee is currently reviewing the performance of their program on constructed wetlands for sewerage treatment. It is expected that guidelines for the construction, design and operation of wetlands for treating sewerage effluent will soon be published. Howard believes the attention of the Committee will now turn toward wetlands for stormwater management.

Queensland Department of Environment

Adrian Jeffries informs me that the period for public comment on the draft Queensland Wetlands Strategy has expired (June), and that 53 written submissions were provided to the DoE. Ammendments to the draft are currently being made and he is expecting the final report to be published in December/January.

Centre for Instream Research (CISR) (Griffith University)

Stuart Bunn/Fiona McKenzie .....

NEWS FROM THE CRC'S

CRC FOR FRESHWATER ECOLOGY AGM

Developing a research agenda for the next three years was a major aim of the CRC for Freshwater Ecology's recent two-day annual general meeting held in Albury.

About 100 staff and students from Sydney, Narrandera, Mildura, Albury-Wodonga, Canberra and Melbourne attended the meeting at the Murray-Darling Freshwater Research Centre which was opened by Chairman, Dr John Langford.

The meeting included a series of presentations: Dianne Flett, Demonstrating Research Achievement; Richard Norris, Education Achievements; Graham Harris, The Port Phillip Bay Study - integrating science through models; and Peter Cullen, The Quality Assurance Manual.

The new research portfolio was explored through a series of workshops including water regimes and allocations, energy and nutrient dynamics, ecological assessment and restoration and rehabilitation ecology. Robert Marshall from the CSIRO presented findings from a study on Managing Research Teams.

Chairman's Award

The Chairman's Award of Merit was presented by Dr Langford to Prof Barry Hart for his distinguished publication record over the first three years of the CRC for Freshwater Ecology.

In addition to conference proceedings, Prof Hart has published over 32 articles in referred journals during this period. Many of these articles were co-publications with colleagues, another meritorious feature in a Cooperative Research Centre.

Director's Award

A feature on the evening's social calendar was the Director's Award for Memorable Contributions. This went to Dr Ben Gawne for his efforts in making the opening of Lower Basin Laboratory, Mildura, a truly earth-moving event.

In presenting the award, Peter Cullen reflected on Ben's remarkable ability to get the Deputy Prime Minister, the Chairman John Langford, the Director Peter Cullen, the Deputy Director Terry Hillman and Chief Executive of Lower Murray Water Brian Grogan together on an unstable platform which he then arranged to collapse at a critical moment.

The fact that he'd arranged television coverage of the event, as well as an audience of 80 distinguished guests, contributed to his success.

That Ben had failed to break the necks of the distinguished company was seen more as a measure of the cool headedness of the leadership of the CRC and, indeed the country,

rather than any failing in the design and implementation of the Grand Gawne scheme to improve promotion opportunities for staff within the CRC.

GROUND-BREAKING OPENING FOR LOWER BASIN LABORATORY

In a ground-breaking ceremony, the Deputy Prime Minister, Mr Tim Fischer, announced the opening of the Murray-Darling Freshwater Research Centre's Lower Basin Laboratory in Mildura on October 4.

Press reports claimed that the event caused Mr Fischer some amount of stage fright when the dais began to buckle underneath the assembled dignitaries. CRCFE Chairman John Langford upstaged the lot of them by bravely persevering with his introductory remarks while the others made off to safer ground.

"We cannot afford to neglect the Murray-Darling", Deputy Prime Minister, was the message delivered to the audience of about 80 water resource managers, scientists and academics, regional and Federal politicians and community representatives.

The opening was the culmination of six years of work following an independent review of the MDFRC in 1990 which identified a need to establish a mid-river laboratory to conduct research in the lower reaches of the Basin. Dr Ben Gawne was appointed last May to head the laboratory.

"To sustain this valuable agricultural and environmental resource we must ensure there are positive steps being taken to understand the ecology and forces which are leading to problems such as massive algal blooms, plagues of pest fish and the decline in the biological systems that have maintained our water quality in the past," Mr Fischer said.

A post-opening public seminar, conducted at the Mildura TAFE, *Science and the Murray-Darling*, was addressed by Keith Walker who presented an ecological diary of the Murray River, John Whittington (algal growth), John Harris (carp), Martin Thoms (environmental flows), Mike Copland (education and the river), Terry Hillman (floodplains and billabongs) and Ben Gawne (opportunities for the Mildura lab). Peter Cullen summed up the afternoon's talks.

A paper of the talks will be available soon and will be distributed to the seminar audience.

WATER STUDIES CENTRE WINS FUNDS FOR INTERNATIONAL PROGRAM

The Water Studies Centre, Monash University, in collaboration with the Swinburne University of Technology's Centre for Applied Colloid and BioColloid Science has won funding for a project under the Australian Government's scheme for Targeted Institutional Links (TIL).

The three-year project, *Australia Indonesia Environmental Science - Water Quality and Waste Treatment,* is valued at $1.2m and includes three sub-programs:

1. Water quality in the Bedadung Valley - lead by Prof Barry Hart;
2. Treatment of palm oil liquid effluent - lead by Dr Ian Harding (Swinburne Colloid Centre); and
3. Biotechnological degradation of lignin-related wastes - Prof Oei Ban Liang (IUC on Biotechnology).

The project will be conducted in conjunction with two research centres in Java, Indonesia: the Inter Universities Centre for Biotechnology at Institut Teknologi Bandung and the Environmental Studies Centre at Universitas Jember.

The CRC for Freshwater Ecology is one of two CRCs associated with project (the other, the CRC for International Food Manufacture and Packaging Science) through their potential to involve a broad range of Australian researchers and research groups in cooperative relationships with Indonesian research institutions.

CRC formalises links with MD Association

Bringing science and the community together is the aim of an agreement that was signed by the Murray-Darling Association and the Cooperative Research Centre for Freshwater Ecology at the Association's 52nd Annual Conference, *Murray-Darling Basin World's Best Practice?,* held in Barmera, South Australia.

The protocol recognises the inter-relationship between an informed Basin community and good decision making and agrees that both parties will strive for excellent information exchange. It also supports recent initiatives by Commonwealth, State and Territory governments to strengthen their commitment to the effective management of the Murray-Darling Basin.

WATER ISSUES PRESENTED TO PRIME MINISTER'S COUNCIL

The September meeting of the Prime Minister's Science and Engineering Council included a presentation on water issues in the Murray-Darling and the Great Artesian basins. Professor John Lovering introduced presentations by John Verhoeven, NSW DLWC, and Don Blackmore, Murray-Darling Basin Commission, while Director of the CRC for Freshwater Ecology, Peter Cullen, provided a summary of the discussions.

Prof Cullen said that Government needed to make sure that the best scientific information was available before making decisions, and needed to make sure that this knowledge was integrated into the policy-making process.

"The degradation of the Murray-Darling Basin shows what happens when we proceed with developments without understanding the implications," Prof Cullen said. "We must not make the same mistakes in the Lake Eyre Basin, which is currently threatened by proposals for irrigation development."

"Our ignorance of Australian land and water systems has cost us dearly. Widespread degradation of land and water has caused much economic hardship. Farmers, rural communities and taxpayers are paying the costs of this ignorance."

"We can improve the efficiency of our irrigation industries through market mechanisms and further investment. Using pipes rather than channels for transporting water, for instance, will save us both money and water in the long term. More than 95% of channelled water is thought to be lost to evaporation and leakage."

Prof Cullen said that governments should ensure that the environment had first call on the water that was save through these efficiencies.

Managing Australia's Inland Waters, Roles for Science and Technology, a paper prepared by an independent working group for consideration by PMSEC at its meeting, included a series of recommendations. Included in the paper is the article, *Environmental allocations - the ecological imperatives,* authored by Prof Peter Cullen, Dr Jane Doolan (DNRE, Vic), Dr John Harris (CRCFE), Dr Paul Humphries (CRCFE), Dr Martin Thoms (CRCFE) and Dr Bill Young (CSIRO, DWR).

To access the paper, contact Meredith Walton at the CRC, University of Canberra on (06) 201 5168 or email, meredith@lake.canberra.edu.au

Sampling Nutrients in Aquatic Ecosystems Workshop

21 and 22 April 1997

University of Canberra

The design of sampling programs and the use of valid sampling procedures are crucial aspects of nutrient studies in aquatic ecosystems. The aim of this workshop is to draw together information on sampling program design and methods for sampling waters, biota and sediment.

Topics to be addressed include:

- design of sampling programs
- statistical aspects of sampling design
- quality assurance/control
- sample collection and storage procedures
- real time sampling and analysis
- *in situ* profile sampling of sediments

Accommodation

The Kythera Motel at 98 Northbourne Ave offers accommodation at a reasonable cost ($77/night). *Please make your own arrangements.*

Tel: (06) 248 7611
Fax: (06) 248 0419

A courtesy shuttle bus will run from this hotel to the university.

Cost

The fee for the two day program is $100 and includes morning and afternoon teas, lunches and a workshop dinner.

Call for Papers

Submitted papers on any aspect of designing sampling programs and sampling procedures for nutrients in aquatic ecosystems are now invited. Presentations may be oral (15 minutes) or by way of a poster.

Those wishing to present a paper or poster should forward an abstract to Dr W. Maher.

Abstracts will be printed directly from submitted copies and should be printed 12 characters per 2.5cm and should be totally confined within a space of 16 x 8cm, including the title and authors name and address. Abstracts should be supplied on disk (IBM PC Word 6).

ABSTRACTS SHOULD BE SUBMITTED BY:
JAN 31, 1997

POETRY FROM THE SEDGE

After having written up three separate prac reports involving macroinvertebrates, one of our undergraduate students in Environmental Science made a poetic complaint about seeing bugs in her sleep:

The Curse of the Macroinvertebrate

I close my eyes
And see damselflies,
My imagination sees
Only water fleas.
With 40 winks
My sense of self shrinks
And my body
Begins to feel Ostracody.
In hindsight
I have a bright orange mite
In foresight, an iota
Of amphipoda.
When the light is dimmer,
I see a backswimmer
And across my mind will float, then,
Water boatmen.
I close my eyes sleepily
But the bugs are too deeply
Imbed in my head
I'm under a curse, have you heard of it?
The curse of the macroinvertebrate.

C. Dunn
Murdoch University

Her tutor's response was:

Cures for the curse

Here are the cures which you can heed,
The first of which is reactive indeed.
Complain as you will to someone who knows.
They'll hear your voice, take note of your woes.
But you'll get little joy out of this action,
For those in the know are the invertebrate faction.

Try as you might a destructive fix.
Take their preserve, add juice and mix.
Of limited use is this little cocktail,
For in the longterm it's destined to fail.
Drinking of course is fraught with trouble.
The problem, you ask?
You will see them in double!

The final suggestion is proactive in action,
But it involves joining our faction.
Instead of complaining and making commotion,
Take this approach, it's simple in notion.
Used to effect we guarantee sleep,
Count bugs in your head, instead of sheep.

OBITUARY - TED HOLLIS

Many ASL members will have already heard with deep regret that Ted Hollis from University College London died of heart disease immediately after the INTECOL Wetland Conference in Perth. Ted was 49 and is survived by his wife and three daughters. He was in Perth to present a key-note plenary talk and added in several general papers as well. Prior to this he spent two weeks in Jabiru delving into the wealth of hydrological data that various agencies have amassed since 1965.

Ted will be best remembered for his political-hydrological work in Europe and north-west Africa where he constantly challenged the conventional "wisdom" of economic developers and rationalists. He used scientific analysis and honesty to challenge the basic precepts of irrigators, dam builders and the like. He was the key figure in the development of a NGO strategy for preventing the loss and degradation of Mediterranean wetlands. This led to a five European nation and five NGO Mediterranean Wetland Program (MedWet) that has now spread to North African and Black Sea countries. His influence on this project has been enshrined by the recent adoption of a Government agreed strategy for Mediterranean wetlands.

Ted touched many people with his passion for wetlands, his simple common sense, his straight talking and raucous behaviour. He saw himself as a wetland hydrologist who still wore rubber boots (even if he did call them wellingtons) and worked with data. In the Mediterranean he touted corruption as a prime cause of wetland loss and degradation and under considerable pressure from irate officials adroitly changed this to the more acceptable term of irregular financial practices. In Tunisia he claimed further dams would destroy and not enhance the economic base of an important wetland area.

My personal contact traversed continents with him and thedinners and late nights with challenging irreverent discussions are valued memories. He had panache and a delightful glint in his eye when pompous officials strode into the room to address the mere scientists of our societies. From Charleston, Astrakhan, Slimbridge, Grado, Moscow, Donana, Kuala Lumpur, Rome, London, Montreux, Santa Barbara, Perth and even to little Jabiru he was a friend who made more friends and influenced others to look critically at their world and do something about it. Thanks Ted, we will, because we did listen.

Max Finlayson
ERISS; Jabiru

PS It is expected that Ted's key note plenary talk given at INTECOL will be published with assistance from his long-time friend Mike Smart from the Ramsar Convention Bureau. Thanks Mike.

60 MINUTES

ASL Executive Teleconference, 5 July 1996

Present: R.Marchant, P.Boon, J.Jackson, M.Brock, S.Wade, J.Growns, G.Closs, M.Douglas, M.Bales.

1. **Berri Congress**: Sam Wade indicated that arrangements for this meeting have been completed. A trade show has been organised for the Sunday afternoon. Twenty or so registrants at the INTECOL meeting have expressed interest in attending the the congress. The post-conference trips have been finalised and public liability insurance taken out to cover these events.

2. **Biomanipulation workshop**: Mick Bales confirmed that the three overseas speakers have agreed to present papers at the workshop and that their travel arrangements are being finalised. Total travel costs will come to about $7000. The three may also give papers at the ASL congress. Dr Ramesh Gulati (from Europe) has also indicated that he would like to attend if he can raise the travel funds to get to Berri. There was some discussion as to what extent the ASL might subsidise his attendance and it was agreed that the society would offer him up to $500 to cover accommodation and registration at Berri provided he gave an address at the workshop. It was agreed that at this late stage there was no obligation on the society to pay the travel costs of a fourth overseas speaker. Three local speakers have also agreed to present papers: Vladimir Matveeva, Peter Gehrke, Garry Jones. It was suggested that a facilitator might be used to ensure the workshop ran smoothly. P.Boon, M.Brock and M.Bales will discuss who might be suitable.

3. **Finance**: R.Marchant, standing in for M.Hart, gave the following details: general account has $18647.62, most of which ($12000) is money received by the ASL from LWRRDC to run the biomanipulation workshop; trust account has $38606; the society currently has 578 members.

4. **Requests for financial assistance**: INTECOL organisers have written to R.Marchant thanking the society for offering $3000 to cover the costs of printing abstracts. The organisers of the team to represent Australia at the International Biology Olympiad have also written requesting a donation. After discussion the executive decided that it was not possible to give a donation this year as the society's budget for such items had been expended on INTECOL. The president would convey this decision to the organisers.

5. **Wetlands policy**: A brochure outlining the ASL's wetlands policy has been compiled by P.Horwitz and sent to the recent Ramsar meeting and the forthcoming INTECOL meeting. P.Boon suggested spare copies should be sent to various prominent people in government to raise the ASL's profile.

6. **ASL representative on wetlands committee**: P.Boon has been

corresponding with the Federal government asking that an ASL member be allowed onto the wetlands committee run by ANCA. This matter is still being resolved.

7. **ASL home page**: M.Douglas told the executive that the home page was now available on the internet. He will send details including the address to the newsletter editor.

8. **ASL's future directions**: The president, P.Boon, was very keen to have a detailed discussion on such matters at the Berri congress and suggested that at least an hour was set aside for this. He asked S.Wade to indicate to the organisers that such a session should be held on the Monday, preferably in the afternoon, before the AGM. A short agenda of possible items for discussion would be put in the conference bags.

9. **Student assessment**: assessment sheets for the judges of student prizes at the forthcoming congress will be prepared by G.Closs in the next few weeks and sent to the executive for comment.

Meeting finished at 5.10pm

EXECUTIVE MEETING, BERRI HOTEL, BERRI SA, 29 SEPT 1996

Present: J.Jackson, P.Boon, R.Marchant, m.Brock, M.Douglas, S.Wade, G.Closs, M.Finlayson, M.Bales; apologies M.Hart

1. **Tasmanian Hemipteran key**: in 1991 the ASL voted to give the Fauna of Tasmania committee $1000 to facilitate the publishing of I.Lansbury's handbook to Tasmanian aquatic Hemiptera. S.Bunn sent the executive recent corresponsdence from Lansbury thanking S.Bunn (and thus the society) for trying to expedite matters. However, the handbook still has not been published (10 years after submission) and Lansbury is now withdrawing from the project. The ASL has so far not sent any money.

2. The president and secretary gave summaries of the reports they would present at the AGM.

3. **Biomanipulation workshop**: M.Bales summarised arrangements that had been made. 58 registrations had been received. Three overseas speakers and 3 local speakers were going to present papers. A facilitator had been hired. Abstarcts would be handed out to those who had reigistered.

4. **Donations**: The executive agreed some time ago to give $3000 to the organisers of the Intecol meeting in Perth; the money would be used to publish the abstract book. The society has yet to receive an invoice for this amount. The secretary will contact J.Davis, one of the organisers, about this matter. The Australian Wetland Alliance has also asked for sponsorship. This will be dealt with by the incoming executive.

5. Paul Boon informed the executive that ASL has written to the new federal government asking to be represented on the federal Wetlands Committee.

6. **ASL home page**: this was set up by M.Douglas. Details of the web

address were publicised in the last newsletter.

7. **Student awards**: G.Closs had already organised judges for assessing the papers to be given by students at the congress.

8. **Membership officer**: it was suggested that the position of membership officer should be combined with the newsletter editor position rather than with the position of treasurer, as at present. Currently the editor has to handle many enquiries from members and it was thought that such a re-arrangement would facilitate matters. Such a change would be discussed with members at the AGM and would require a change to the constitution.

9. **Public affairs**: G.Closs indicated that it was difficult for the society to repond quickly to public matters and suggested that this issue be examined by the new executive.

10. **ASL Congresses**: the executive discussed the need to check that potential congress (or workshop) organisers have sufficient resources and back up to be able to run such meetings successfully.

35TH ANNUAL GENERAL MEETING OF THE ASL, 30TH SEPT 1996, BERRI HOTEL, BERRI SA

(p=proposed, s=seconded)

1. Agenda adopted (p= R.Marchant, s= G.Closs)
2. **Apologies**: M.Hart, J.Growns, T.Hillman, A.Grant
3. Minutes of the AGM accepted (p=A.Chick, s= G.Closs)
4. Matters arising from last AGM - none.
5. **President's report**: see attached document.
6. **Secretary's report**: During the last year a new brochure outlining the activities and nature of the ASL was produced. This is available from the secretary or the treasurer. Another ASL special publication (no. 11) was also published: "Catalogue of the Australain Mayflies, Recent and fossil" by M.D,Hubbard and I.C.Campbell. This is available to all members free and to non-members for $20. Routine correspondence was received from the Academy of Science, ANZAAS, ASTEC and some other bodies. The secretary replied to a request for input into the recent review of the Inland Fisheries Commission of Tasmania. The list of ASL spokespersons was updated as members sent in their details. A copy of the list was sent to FASTS at the end of 1995 who sent it to a number of media organisations resulting in some beneficial publicity for the society.
7. **Treasurer/membership officer's report**: see attached document. This was accepted (p= I.Campbell, s= A.Chick).
8. **Honorarium for the treasurer**: P.Boon proposed an honorarium of $1500 (s= J.Roberts).
9. **Auditor's report**: see attached document. This was read to members by the secretary and accepted (p= R.Marchant, s= I.Campbell).
10. **Newsletter Editor's report**: F.Sheldon noted she had been the editor for three years; she was willing to continue for another year but felt that there should be a change after that. P.Boon (and the members by acclamation) thanked her for the excellent job she was doing. (p=P.Boon, s= P.Schultz).
11. **Jolly award**: D.Mitchell as chairman of the current committee anounced that no award was to be made this year. He reminded members that nominations were valid for three years but that there was difficulty in keeping CVs up to date. (p= P.Boon, s= M.Brock).
12. **Student travel awards**: R.Marchant announced that four students were given awards: M.Read ($250), S.Grinter ($250), D.Nias ($200) and T.Smith ($300).
13. **36th Congress**: G.Closs and P.Suter offered to run a congress in NE Victoria, either at Beechworth or Wadonga.
14. **Future congresses**: no expressions of interest were forthcoming.
15. **Election of the executive**: the following were elected unopposed:

- President: M.Finlayson (p= D.Mitchell, s= A.Chick)
- Vice-President: P.Horwitz (p= M.Brock, s= P.Humphrey)
- Treasurer: M.Hart (p= R.Marchant, s= P.Gerhke)
- Secretary: R.Marchant (p= P.Boon, s=P.Horwitz)
- NSW: A.Chick (p= M.Brock, s= N.Rea)

- Qld: G.Lucats (p= M.Finlayson, s= D.Mitchell)
- SA: K.Muller (p= P.Boon, s= S.Wade)
- WA: K.Trayler (p= J.Davis, s= P.Boon)
- ACT: B.Banens (p= J.Davis, s=P.Gerhke)
- Vic: N.O'Connor (p= G.Closs, s= P.Boon)
- NT: M.Douglas and Tas: J.Jackson agreed to serve again.

16. **Election of auditors**: Coster Galgut Pty Ltd were re-elected (p= R.Marchant, s= A.Chick).

17. (Student award committee report and Door prize committee report were given the next day at the annual dinner. These are presented elsewhere in this newsletter.)

18. **General business**:

a) SIL congress: R.Marchant, as national representative for SIL, spoke about the initial steps in organisation of the SIL congress to be held in Melbourne in 2001. Further details are included in this newsletter including membership application forms.

b) Changes to the constitution: the secretary informed members that the auditors had suggested various changes to the constitution relating to the taxation status of the society. Once suitable clauses had been drafted they would be published in the newsletter and a vote would be taken at the next AGM.

c) It was also suggested that the position of treasurer/membership officer should be changed to treasurer only and the duties of the membership officer be transferred to the newsletter editor. This will be discussed by the incoming executive and if such a change is required then a change to the constitution will be needed, which will also be published in the newsletter.

d) M.Finlayson proposed (s= M.Brock) that: the ASL forms a policy sub-group to investigate mechanisms to:

e) raise the profile of the ASL with government policy makers and adisory panels;

f) deal with external requests for the provision of advice on issues;

g) provide interactive fora to debate conservation issues within the ASL;

h) issue policies on selected issues;

i) maintain the current strengths of the society;

j) present options to the executive and the 1997 AGM.

k) A hearty vote of thanks to F.Sheldon and her colleagues for organising the congress was proposed by P.Boon (s= T.Doeg) and carried with acclamation by the members.

l) M.Brock proposed (s= R.Marchant) a vote of thanks to the outgoing president, P.Boon, for his smooth leadership over the last year; this was also carried with acclamation.

R.Marchant, Secretary

EXECUTIVE MEETING, BERRI HOTEL, BERRI SA, 2 OCTOBER 1996

Present: N.O'Connor, J.Jackson, B.Banens, K.Muller, P.Horwitz, A.Chick, P.Boon, M.Finlayson, R.Marchant, F.Sheldon, M.Douglas

1. The secretary will email the executive list to all members of the executive.
2. **36th congress**: G.Closs, P.Suter and A.Chick are the contacts for this conference. Notification will come out in the March newsletter. Possible venues are the old hospital at Beechworth or at the La Trobe campus in Wadonga.
3. **SIL congress**: it was suggested that ASL hold a meeting during the course of this international conference. Such joint meetings are not welcomed by the SIL (R.Marchant, SIL national representative). However, if the time of year was suitable it might be possible to have an AGM of the society.
4. **Jolly Award**: an award could not be made this year because of problems with the conditions of the award. D.Mitchell will contact M.Finlayson about this.
5. **National Wetland Advisory Committee**: P.Boon as president wrote to the new federal government asking that the ASL be represented on this committee. This request is still being considered.
6. **CSIRO journals**: rumors are circulating that some of these journals may be closed down. P.Boon will contact A.Grant (Editor, Marine and Freshwater Research) to confirm these rumors and report back to the executive.
7. **News group**: M.Douglas suggested that an email news group be started as part of the home page. This would enable members to discuss specific matters via email. He agreed to set this up and estimated it would take a month or two to get going.
8. **FASTS**: the new developments in FASTS need following up. Recently they have been objecting to funding cuts to CSIRO and the universities and vigorously supporting the CRCs.
9. **Australian Wetland Alliance**: this body has requested support of $200 a year for three years to help fund an adminaistrative officer for one day per week. ASL is one of thirty members of this alliance. This request was discussed and agreed to. M.Finlayson will write to them.
10. **Policy sub-group**: this will consist of the executive plus the following members: P.Gerhke, P.Schultz, J.Roberts, D.Nias, I.Campbell, L.Barmuta, M.Brock. The president will co-ordinate the group. Communication will be via the news group
11. **Current issues**: the policy sub-group will prepare an arid-zone policy statement. F.Sheldon agreed to co-ordinate this with P.Boon. The current wetland policy can be downloaded from the web page.
12. **NSW threatened species protection act**: at present this act does not protect aquatic animals. P.Horwitz has been contacted about this and has already written back to the NSW authorities. He will send a copy of his letter to the executive.

COOPER CREEK IRRIGATED COTTON PROJECT - THUMBS DOWN AT THREE RECENT CONFERENCES

Participants in three recent conferences of freshwater scientists publicly declared their opposition to the proposal to withdraw 42,000 ML of water from the upper Cooper Creek at Currareva, to support cotton cultivation.

1. In a scientific workshop at Windorah near the site of the proposed project, the 12 presenters publicly released the following recommendations:

> ***"Open letter to the Minister for Natural Resources, the Honourable Howard Hobbs MLA.***
>
> *(Windorah, 5 September 1996)*
>
> *The following scientists met at a Scientific Workshop at Windorah over the period September 2-5 1996, to consider information relevant to the potential physical, ecological and socio-economic impacts of the proposed "Currareva Agricultural Development" on the Cooper Creek.*
>
> ***Based on the outcomes of the Workshop, we recommend that the Queensland Government:***
>
> *(1). rejects the application by the Currareva Partnership for the proposed Currareva Agricultural Development (March 1996);*
>
> *(2). rejects* ***all*** *future applications for the intensive agricultural projects involving cultivation and/or irrigation on the Lake Eyre Basin rivers in Queensland;*
>
> *(3). legislates to improve the process of dealing with water allocation and other natural resource management issues of this nature and;*
>
> *(4). takes a lead role in the development of an interstate Lake Eyre Basin catchment management structure with appropriate resources and powers to ensure the long-term protection of the ecological integrity of the Basin."*

2. At INTECOL's Fifth International Wetlands Conference in Perth, the following resolution was passed unanimously:

> ***"RESOLUTION 2 of INTECOL's Fifth International Wetlands Conference - Closing Ceremony 27/9/96***
>
> ***Carried unanimously***
>
> *NOTING that the wetlands of the Lake Eyre Basin (mound springs, salt lakes and freshwater lakes and swamps) are of international significance . Some (Coongie Lakes) are listed under the RAMSAR Convention as Wetlands of International Importance. Lake Eyre supports significant numbers of migratory wading birds.*
>
> *RECOGNIZING the potential of the Lake Eyre Basin to provide relatively undisturbed reference sites for international scientific studies of arid zone wetlands and rivers*
>
> *AND RECOGNIZING that many of the wetlands in the Lake Eyre Basin are supplied by Cooper Creek*
>
> *AWARE that large scale water diversion projects cause significant detrimental impact on wetlands of the world and their plants and animals*
>
> *The wetland scientists and managers attending INTECOL's Fifth International Wetlands Conference*
>
> *CALL on the relevant State and Federal Governments of Australia to implement a moratorium on irrigation or other intensive agricultural proposals which divert water from the Lake Eyre Basin, such as the Currareva proposal to grow irrigated cotton, and to set up a framework for the sustainable management of the Lake Eyre Basin."*

3. At the 1996 ASL Congress at Berri, 36 participants signed a petition endorsing the Windorah recommendations.

Summary proceedings of the papers presented at the Windorah Workshop (and the full text of the Windorah open letter) can be obtained from the Australian Conservation Foundation (120 Wakefield St. ADELAIDE 5000, Fax 08 232 2490, Phone 08 232 2566) for $10.00.

ASL WETLANDS POLICY DOCUMENT

Pierre Horwitz and his team have produced a beaut statement on ASL's views on wetlands, their loss and management. The text from the document is reproduced below. It has been circulated at the recent Ramsar meeting at Brisbane by Gillian Dunkerley and at INTERCOL in Perth by Jenny Davis. Remaining copies will be sent to key politicians, bureaucrats and managers in the near future. I'm sorry that we couldn't send a copy to each member of ASL: we couldn't afford to print more copies than were absolutely necessary. As I said in a past President's Report, hats off to Pierre and the rest of the team for this document.

Paul I Boon

A Wetlands Policy Document

Australia, a land renowned for its vast arid deserts, is blessed with an incredibly diverse array of wetlands. The continent's age, geological history and climate, have combined to produce wetlands of great physical, chemical and biological variety. They Australia, a land renowned for its vast arid deserts, is blessed with an incredibly diverse array of wetlands. The continent's age, geological history and climate, have combined to produce wetlands of great physical, chemical and biological variety. They range from tropical to cool temperate or alpine, from coastal to far inland, and from permanently wet to bearing water only once in one hundred years. Wetlands include river systems with floodplains and billabongs, tidal wetlands and mangroves, mound springs, peatlands, shrublands which have surface water irregularly, and other swamps, karstic wetlands and a veritable array of lakes (coastal dune lakes, alpine lakes, dams and reservoirs, saline lakes, and so on). Photographs shown in this document reflect this extraordinary variety of Australian wetlands. </p>

In such a dry landscape, water is of paramount importance; appropriate management of wetlands is critical to provide a sustainable and wise use of water resources, and to conserve their complex diversity.

The AUSTRALIAN SOCIETY FOR LIMNOLOGY (ASL) is an Australian-based scientific society whose focus is wetlands - every type and everywhere on the continent. The ASL was established in 1961, and has a current membership of over 500 scientists, managers, engineers, teachers and tertiary level students from all states

and territories. Members have a strong professional interest in inland aquatic issues, in the maintenance of biodiversity and water quality, and the wise use of aquatic resources in Australian inland waters. The Society includes members working in most relevant government agencies, tertiary institutions and many industries related to aquatic resources. Through their daily activities, members have constant contact with local communities and are in a sound position to interpret and advise on their concerns over wetland issues. The Society has both a substantial knowledge base, and a responsibility, to ensure that wetlands are managed in a sustainable manner which will guarantee their continued existence and functions, and through this the maintenance and enhancement of the quality of life for all Australians.

It is the belief of ASL Wetland Working Group that the Society's knowledge base give it a responsibility to influence decision making with respect to wetland management in Australia. Indeed the ASL can, and does, offer its scientific expertise to governments and the public to assist in wetland management issues. The Society can help!

For the same reasons it is incumbent upon politicians and managers of wetlands in Australia to recognise the ASL as a key "stakeholder", and to both heed and seek its advice wherever and whenever appropriate.

Accordingly the following document has been prepared by a working group from within the Society, and its has the full support of the Society's executive.

The ASL goal for wetlands is:

"TO PROVIDE SCIENTIFICALLY-BASED INFORMATION TO CONSERVE AND REHABILITATE AUSTRALIA'S WETLANDS."

Intrinsic values

In themselves wetlands have an intrinsic value which is not directly related to any human benefit: wetland systems include plants and animals which have a right to exist irrespective of our activities and it is our moral obligation to respect that right. This extends to the way we perceive our role in wetland management: one alternative which must be considered is for the active non-management of wetlands (in other words, to leave them be!).

Beneficial values

In addition, wetlands have extraordinary beneficial values to humans: they have ecological value and as such improve the quality of our surroundings, they have a direct financial value for the things we can extract from them, they have considerable social value as places for meeting, recreation, relaxation, learning and aesthetic appreciation, and they have cultural significance. From harvesting on land, in sediments or in water, from the provision of moisture or drinking water, to the

recreational importance or educative role they play, and the aesthetic and spiritual significance in the driest inhabitable continent on earth, wetlands are immeasurably valuable.

Do we know enough?

Too often we assume that we know it all, and that for each wetland a set of values and benefits can be listed and evaluated. Sadly, there is much we do not know about wetlands, and the role they play in ecosystem maintenance, or their direct or indirect benefits to other catchment and off-shore values. Unforeseen values, and interactive values which are often too complex to decipher therefore have to be catered for in wetland management. These types of values dictate caution in the way that we behave in the absence of knowledge.

Wetlands are the most visible part of the hydrological cycle to which they, and we, belong. They will never be successfully managed by addressing either the wetland itself, or the problem component only. They are the quintessential example of the importance of holistic management. The nature and variability is reflected accurately by their biodiversity value, and management for the maintenance of this value should embrace all those values given above.

The Australian Society of Limnology is well placed to help governments, industry and the public to define their wetland values.

European utilisation of wetlands has not rested with the historical extraction of water for local domestic use. We have demonstrated a near complete miscomprehension of the nature of water and its relationship with this ancient land. Large numbers of hard hoofed and thirsty stock (cattle, sheep, pigs and goats) are allowed direct access to permanent river pools, lakes and swamps, springs or soaks. Smaller water sources are physically enlarged and welled in an attempt to maximise domestic and agricultural supply. Dams are built impeding and redirecting water flows, and land is drained and irrigated. Land has been cleared of vegetation completely in places, altering groundwater levels and changing surface sedimentation patterns. Imported nutrients have been applied liberally to soils which long ago had them leached out, and soils and sediments are being treated to a bewildering variety of other chemicals to artificially and temporarily sustain often inappropriate activities.

The net result is well known and classically tragic, with the eutrophication of waterways, salinisation of some waters and poisoning of others, and drainage and flooding of systems through the geomorphological restructuring of rivers and wetlands. In doing so we are gradually losing distinctive features of the Australian landscape. Species that were once widespread and common across the landscape are rare, and examples of rare species which have declined in their range can also be demonstrated. Instead, there are types of plants and animals, often introduced, which are increasing

their abundance and distribution, species which tolerate the environmental changes.

This tragedy is slowly being recognised, forcing a massive alteration to current attitudes to the land and water. Around Australia the process of restoration has commenced, and wetland systems and their riparian zones are frequently targeted for remedial action, principally by local community groups. The role of the scientist in this process is to advise on appropriate strategies, locations and components for rehabilitation so that the limited success shown already can be expanded, and so that the rates and extent of success can be monitored.

Rehabilitation will focus on ecological processes, so that wetlands continue to act as equilibration points in sedimentary processes, nutrient and carbon assimilation and cycling.

Key Principles for Management

- Wetlands are part of entire systems and cannot be managed in isolation.
  Water will not stay still; it connects areas by flowing across or through them, and transports material with it. So wetlands cannot be used as dumping grounds and cannot be managed and protected in isolation. To do either would be both foolhardy and counterproductive to the aims of conserving and rehabilitating wetlands.

- Recognise the importance of bioregions as our warehouses of distinctive and endemic biodiversity. This principle emphasises that the "bioregion" is the most important geographic scale for determining management priorities for wetlands, and their relative importance for reservation and sustainable utilisation.

- Ensure that local, historical, anecdotal and scientific knowledge is accessed and used in a coordinated fashion. Substantial information is now available for public purposes, but rarely is it held in one place. Bioregional planning and catchment management should include this collation process. Apart from anything else this should both enlighten local decision makers or other interested parties.

- Ensure that management has a precautionary approach in the absence of data, and that the requirements for ongoing research, baseline data, and monitoring as benchmarks for environmental quality are well understood in the wider community.

All of the above suggest the need for a cooperative, holistic approach in the management of inland waters, in order to be pre-emptive, and to benefit future generations. Cooperation must exist between scientists, government or other regulatory agencies, private industry, and local communities for an effective resolution to catchment based processes. This implies that common goals of wetland conservation and restoration are greater than local or sectoral interests in using them.

The ASL is prepared, and able, to assist in this cooperative process by making its expertise available on request, or by submission.

Some Key Management Practices

- The effects of clearing native vegetation are now well understood in terms of the salinisation, sedimentation and eutrophication of inland waters.
- *Clearance control legislation should be immediately implemented in all states and territories, and coordinated centrally.*
- *The maintenance of existing riparian zones, and buffer zones around these riparian zones, is of paramount importance to maintain viable ecological processes within wetlands.*
- *Where appropriate, rehabilitation of degraded wetlands should always include the re-establishment of riparian vegetation.*

- Feral and domestic stock can, through defaecating in, and trampling in and around wetlands, drastically alter ecological processes within wetlands, and ultimately degrade their values.
- *Protocols for stock removal from wetlands must be developed and their implementation encouraged within rural communities. The management of feral stock needs more research on appropriate methods of control.*

- *We have to apply reasonable limits to the extraction of water so that wetland processes can be maintained.* This applies to groundwater extraction, irrigation activities and the construction of dams.
- *Dams and weirs should be constructed only after all other alternatives have been fully explored, and if constructed ensure that design caters for adequate environmental flows and other biological considerations such as fish migrations.*

We have to phase-out of the dumping of wastes into our waterways and wetlands (by rejecting the notion that wetlands can be used to dilute our wastes). Natural wetalnds must not be used for waste disposal, and the construction of artificial wetalnds cannot be used as a justification for the continued degradation of natural wetlands.

FURTHER INFORMATION?

This document has been compiled for, and on behalf of, the ASL by the ASL Wetland Working Group. If you require further information concerning the Society, or seek the Society's assistance with wetland management issues, please contact the Society's Secretary, Dr Richard Marchant, Museum of Victoria, 71 Victoria Cres, Abbotsford, VIC 3170. Ph: 03 9284 0200 (within Australia). Ph: 61 3 9284 0200 (international). Fax: (03) 9416 0475 (within Australia). Fax:61 3 9416 0475 (international). Email: rmarch@pioneer.mov.vic.gov.au

This text also appears on the ASL Home Page
http://www.ntu.edu.au/science/mdouglas/asl_home.html"

ARTICLES

Digging for data

Michele Barson and Paul Shelley, Bureau of Resource Sciences

Soil and land resource survey data sets around Australia have been dusted off to compile a computer-based directory to the data sets held by government agencies around Australia. The database now contains metadata for some 3170 surveys, ranging from a survey along the 'Great Southern Railway Line' in Western Australia in 1888 to surveys completed last year. There are 45 records for ACT, 480 (NSW), 260 (NT), 225 (Queensland), 205 (Victoria), 95 for South Australia, 120 for Tasmania and approximately 1740 for Western Australia. A further 570 records summarise CSIRO's WARIS database on a 1:100,000-scale sheet basis.

There is some duplication of records, particularly of those from Western Australia, because survey descriptions were acquired from several independent sources. These are being edited to progressively eliminate the duplicates.

The directory builds on the bibliography published by Blain, Clarke and Basinski in 1985. A major aim in developing the Directory has been to provide enough information for the user to decide whether a data set is appropriate for their purpose before the detailed data are requested from the custodial agency. Blain, Clarke and Basinski's data set descriptions have been substantially expanded, and now include a listing of site data characteristics recorded (see box) and the number of samples recorded or analysed.

Areal data characteristics such as climate, land use, vegetation, geology, land capability/suitability are shown if they were recorded as part of the survey. The type of spatial referencing used, the spatial coverage of the survey, how the data set is stored, its currency, quality (including positional accuracy) and availability are also given where known for each data set description.

The descriptions reflect what is currently known about the individual data sets. Many of the data sets were collected some years ago and unfortunately the data

documentation and, consequently, the resulting data descriptions (metadata) are incomplete, particularly in relation to site data characteristics and lineage and quality.

The database is mounted on the National Resource Information Centre's National Directory of Australian Resources (NDAR) and can now be searched via a World Wide Web query form. This form provides for a text search (of title, abstract or suggested keywords) which can be combined with a state-level area search and/or a broad soil parameter search (soil morphology, chemical characterisation or physical characterisation). The URL of the form is http://www.nric.gov.au/nric/data/lrs_search.html.

Search criteria are run in real time against a very large Oracle database. Consequently searches involving several independent parameters can take some time to run. Other search tools and services are available from NRIC for those with particularly complex search requirements. Geographic searching is limited to a state-level search; a more sophisticated spatial search tool is currently being investigated. Searches can also be done using place names; these are done using the word search ie searching the title or abstract for the required name.

The directory has been used to locate soil carbon data which Michele Barson and Jan Skjemstad (CSIRO Division of Soils) are using to produce a soil carbon map for Australia. Maps of survey coverage and summaries of the types of data collected for the surveys generated from the directory are being used by Michele and State colleagues to describe the present availability of soil and land resource survey information and assess future needs on behalf of the National Landcare Program.

Many people in State soil and agriculture agencies and CSIRO have contributed to the development of the database. They include Neil McKenzie, Paul Clayton and John Williams (CSIRO Division of Soils), Paul Walker (CSIRO Wildlife and Ecology), Adrian Webb, (now a consultant), Mike Grundy and Kerry Rosenthal (Queensland Department of Primary Industries), Blair Wood and Mike van Cuylenberg (NT Department of Land Planning and Environment), Greg Beeston and Jim Dixon (Agriculture Western Australia), David Maschmedt (South Australian Department of Primary Industries), Greg Pinkard and Mike Temple-Smith (Tasmanian Department of Primary Industries and Fisheries), David Alexander (Office of Geographic Data Coordination, Victoria), Les Russell and Bruce Weston (now Department of Environment and Natural Resources, Victoria) and Peter Houghton (now NSW Department of Land and Water Management).

Dataset descriptions were compiled by Tracey Rooney (Queensland), Ken Rowe (Victoria), Warren Jackson (Tasmania), Janet Hoskins (NT), Peter Charman and Graeme Wickham (NSW) and Greg Mlodovsky (WA). Indexing and checking of the descriptions was carried out by BRS staff, David Exton, Steve Leahy and Penny Reyenga.

Have we got them all? Check the directory to see if your favourite survey or dataset is described. If it's not there, contact Michele Barson or Paul Shelley at BRS.

Site data characterisation

- Observation type
- Nature of samples taken from profile
- Field morphological description and standard
- Dominant soil types
- Chemical characteristics/analyses
- Physical characteristics determined
- Mineralogical characterisation
- Biological characterisation

For further information, contact:

Michele Barson: Tel: (06) 272 4347; Fax: (06) 272 4896;
Internet: MMB@mailpc.brs.gov.au
Paul Shelley: Tel: (06) 272 4688; Fax: (06) 272 4687;
Internet: pauls@henric.nric.gov.au

see also information on the Remote Sensing of agricultural land cover change project
http://www.brs.gov.au/brs/apnrb/landcov/landcov.html

Climate Change Newsletter now on the WWW

http://www.brs.gov.au/brs/ccs/ccn/8.2.html

HERITAGE GUIDELINES PROJECT

Input sought for heritage guidelines

The Australian Heritage Commission is inviting local communities to help create a comprehensive guide on recognising and caring for heritage places.

The Commission, through a recently-announced ***Heritage Guidelines Project***, will draw on the expertise of local government, community groups and interested individuals to develop practical guidelines for helping local groups to record and care for their heritage. They will be the first guidelines to integrate natural, historic and Indigenous heritage in a single approach.

The project, together with the *Coastal Heritage Identification Review*, is being funded under the Commonwealth Coastal Action Program.

The Heritage Guidelines will enable councils and communities to locate their places of special value and to make sure they can be protected both through the planning system and through community initiatives.

The Commission has enlisted consultants Context Pty Ltd to consult widely in developing the guidelines. They are particularly interested in hearing from people about:

- **Similar guides**: examples of guidelines that work and those that don't - and why?
- **Local needs, interests and resources**: how can the Guidelines best meet different local needs and interests, and be adaptable to varying levels of local resources?
- **Successful projects**: examples of successful projects that involved the community in recognising and caring for heritage places
- **Ideas for content and form**: what should the guidelines cover? What formats should we explore - printed word, images, electronic?

The consultants will contact communities through an extensive publicity program and through State based focus workshops with local government and community interest groups. A national search conference will involve professionals in the field.

Consultations will also involve the State government agencies responsible for identifying and protecting heritage places.

Those interested in contributing to the project are invited to contact the team at the following address. They will be sent a questionnaire requesting specific information relevant to the project. The contact details are:

Heritage Guidelines Project
PO Box 193,
West Brunswick 3055
Phone: (03) 9380 6933,
Fax: (03) 9388 2496,
Email: contextgpeg.apc.org

ASL MAILING LIST

ASL now has a Mailing List!!!
to subscribe follow these instructions:

Instructions for Subscribing to the ASL Email List

To subscribe to the ASL email list you simply send an email message to the following address:

Majordomo@pellew.ntu.edu.au

Leave the subject line **blank** and include in the body of the message the following line:

subscribe asl@pellew.ntu.edu.au

That's it! Wait a few minutes for your subscription to be processed and then you should recive some information about the list, the homepage and how to unsubscribe.

If this doesn't work, or if you have any other queries, then contact Michael Douglas at:

m_douglas@bligh.ntu.edu.au

SIL 2001 Congress

SIL (International Association of Theoretical and Applied Limnology) congress:

As many of you will be aware a SIL Congress will be held in Melbourne in 2001. The date of the congress has yet to set. An interim committee has been set up to begin the organisation of this major limnological event. The members of this committee are:

Dr Richard Marchant (SIL National Representative)
Dr Ian Campbell
Dr Barbara Downes
Prof Bill Williams
Prof Peter Cullen
Prof Ron Davies
Prof Peter Tyler
Prof Barry Hart

One of the first matters the committee wants to address is the low membership of SIL by Australian limnologists. Currently there are only 48 Australian members. Annual subscriptions cover the calendar year and cost $65 for regular members ($32.50 for students, $130 for libraries). Further details about the society are given below.

If you wish to become a member of this organisation please fill out the form below and send it to:

Dr R.Marchant
Museum of Victoria
71 Victoria Crescent
Abbotsford VIC 3067

I can only accept money orders or cheques; I cannot take credit cards. Do not send forms or money to the General Secretary - Treasurer (Prof R.G.Wetzel) in the US. Remember you have to be a member for a minimum of three years if you wish to receive all volumes of the congress proceedings. Registration for the congress will also be cheaper for SIL members than for non-members.

SOCIETAS INTERNATIONALIS LIMNOLOGIAE THEORETICAE ET APPLICATAE
International Association of Theoretical and Applied Limnology

APPLICATION FOR MEMBERSHIP

Please type or print

Name in full_____
Gender/Title First Middle LAST(FAMILY)

Mailing Address
(business/institutional address preferred)

_____
_____
_____
_____

Country:_____Postal Code_____

Official Title or Position _____
Date of Birth (optional):_____
Academic Degrees:_____
Fields of Aquatic Research or Interest:
_____

MEMBERSHIP

Membership in SIL shall consist of persons who are actively interested in the advancement of limnology and its applications. Membership categories consist:

REGULAR MEMBER (Aust $65.00 per annum);

STUDENT MEMBER (Aust $32.50 per annum);

ASSOCIATE MEMBER (institutional libraries, organizations; Aust $130 per annum);

AFFLLIATE MEMBER National or regional societies with an observer status in SIL and who pay 15% of the annual institutional fee $19.50 per annum). Affiliate members receive all privileges of membership but not scientific publications;

LIFE MEMBER Individuals who make major financial contributions to SIL. The minimum contribution for this category of membership consists of 70 times the prevailing dues. These contributions will be placed in a special endowment fund intended to help young limnologists attend congresses and other meetings sponsored by SIL.

Honorary and Emeritus membership categories are also available to longterm members of SIL; contact the General Secretary for greater details.

PUBLICATIONS

The publications SIL are essentially triennial. The **Proceedings** (Verhandlungen) consist of massive volumes (ca. 4000 pages) of scientific papers delivered at the triennial congresses of SIL. Irregular **Communications** (Mitteilungen) consist of critical analyses of methods and other topical subjects and are published as finances of SIL permit. Payment of annual membership dues is required whether journals are received in one particular year of not. **Proceedings and Communications** are issued to all members who are in good standing for the entire triennium during which the publications were produced. Back issues of SIL publications are available for purchase; contact the General Secretary for details.

In addition, individual members of SIL can obtain the Archiv fur Hydrobiologie publication series, an official organ of the Association, at a 25% price reduction through the General Secretary.

The SIL Index of Past Publications includes a detailed author and subject index of all papers published in the Proceedings (Vol 1-20) and Communications (Vol 1-21). This valuable source volume is available at cost to members (20sfr or US$10).

PAYMENTS

Exchange rates are established each November 1st for the following calendar year. Payments must be made to the National Representative (Dr R.Marchant).

Membership dues for calender year(s):_____ $_____

Index to Past Publications of SIL: $_____

Total Remittance: $_____

I enclose my check or money order made payable to SIL

National Representative: Dr Richard Marchant
Museum of Victoria
71 Victoria Crescent
Abbotsford VIC 3067

General Secretary-Treasurer: Prof R.G.Wetzel
Dept Biological Sciences
University of Alabama
Tuscaloosa, Alabama 35487-0206
USA

INTERNATIONAL ASSOCIATION OF THEORETICAL & APPLIED LIMNOLOGY (SIL)

The Association was founded in 1922 to promote communication among limnologists of all countries and all disciplines. Membership is open to anyone with an interest in limnology, the study of inland waters.

Limnology is the study of inland water ecosystems, including rivers, lakes, streams, reservoirs, fish ponds, saline lakes, aquifers, bogs etc.

A great variety of research scientists, professionals from all parts of the water industries, and those who are concerned with the management of inland waters, are members of the Association. Their interest includes

- physics of water movements
- water chemistry
- plankton and water plants
- invertebrate ecology
- fish and fisheries
- watershed and reservoir management
- pollution of inland waters
- modelling aquatic ecosystems

Congresses are held every three years, in a different country each time. Recently they have been held in Germany and Spain. In 1995 the Congress will meet in Brazil and in 1998 in Ireland. Congresses provide opportunities for delegates to make scientific research presentations (either oral or poster) and to have informal discussions with colleagues from around the world, as well as to see sites of limnological interest in the host country.

Proceedings of each Congress are published as the Verhandlungen (Verb.int. Verein. Limnol.) and are distributed to all members who have paid dues for three years, whether or not they have been able to attend the Congress. The Proceedings provide an extensive summary of contemporary research on all aspects of limnology.

Communications (Mitteilungen) are published when finances permit and may consist of symposium papers or an extensive review of a particular topic. The communications are also distributed to all members.

Working groups of SIL meet in between congresses to discuss their special interests and to work together less formally.

There are Working Groups on

- Plankton Ecology
- Deep Coring Operations and Paleolimnology in Relict Lakes
- Microbial Activities and the Carbon Cycle in Fresh Waters
- Periphyton of Freshwater Ecosystems
- Wetlands
- Aquatic Primary Productivity
- African Great Lakes
- Aquatic Radioecology
- Biological Monitoring
- High latitude lakes
- Conservation and management of Running Waters
- Aquatic Birds
- Saline Lakes

The **Newsletter** (SILNEWS) and **Annual Circular** keep members in touch with Association business and with information on activities, publications and meetings.

The Association is very much concerned with the conservation of inland waters all over the world and has established a **Conservation Committee** through which the expertise of members can be utilised.

The Association has also established a **Committee on Limnology in Developing Countries** and has established a special fund to assist limnologists in developing countries with subscriptions, access to the Proceedings, and with their own research and training.

COUNTER 4.0

Multi-element digital counter and database

This is a NEW update of my software that may be useful to anyone that routinely uses multi-element laboratory counters. New features incluse: support for up to 600 species from 1000 samples, printer support, full on screen editing, on line help and more. If you checked out version 3.3 - have a second look at version 4.0.

Counter is a DOS software program that uses an IBM compatible computer as a multi-element digital lab counter. Keyboard keys are assigned to up to 600 user configurable items (species). Counter keeps a database of counts for these objects for up to 1000 samples that can be exported as an ASCII file and imported into most spreadsheet programs and statistical software. Count data, objects and key assignments can be edited at any time, and multiple databases can be maintained on the computer.

Counter uses a 4 tier data backup strategy to maintain the data. Data integrity is maintained even in the event of power failure. All database backing up is automatic.

Counter runs in DOS to make use of the many IBM XT and 286 computers that are gathering dust in laboratories and are now worth far less than mechanical laboratory counters (our last 5 element counter was $500.00, an IBM 286 is now about $50!).

The program costs $60 Australian for a single use license, A$150 for a university/government department site license, or $300 for a commercial site licence. All proceeds go towards my current research programs in freshwater ecology. I do not receive any payment whatsoever.

All registered users will be automatically sent FREE updates whenever there are features added.

FREE Evaluation:

If you are interested in seeing a free evaluation copy of Counter (without the ability to export the data), it can be downloaded from:

http://www.ntu.edu.au/science/mdouglas/asl_count.html

while you are there - check out the Australian Society for Limnology home page.

Alternatively, send an email to shane.brooks@sci.monash.edu.au with the subject: "COUNTER EVALUATION" and you will be sent an evaluation copy of the program as an e-mail attachment.

Shane Brooks
Dept Ecology and Evolutionary Biology
Monash University
Clayton 3168
e-mail Shane.Brooks@sci.monash.edu.au

BERRI 1996

OUTGOING PRESIDENT'S REPORT AT THE AGM OF THE 35TH ANNUAL CONGRESS

There are three major points that I wish to make.

First, I'd like to thank the Executive, and especially the immediate Past President, Margaret Brock and the Secretary, Richard Marchant, for their wonderful work in allowing me to "inherit" a robust and healthy Society. A huge vote of thanks also must go to Fran Sheldon and Marcus Brownlow for organising the Congress and Abstracts, respectively. Sadly, I must report that two of our members - Sam Lake and Andrew Boulton - have not enjoyed the best of health lately, but it is pleasing to say that both are recovering. We wish them all the very best in the future.

Second, it is timely to summarise what we have achieved over the past year. Major accomplishments include having a membership of about 600 people, a growth of better than 10 % over the past year, and that ASL was granted observer status at the Ramsar conference in Brisbane. We have sponsored the publication of the Abstracts for the INTECOL V conference held recently in Perth, and will hold a LWRRDC-sponsored workshop on Biological Manipulation immediately after this Congress. A team established at the Jenolan Caves Congress last year produced an excellent Position Document on Wetlands for the Society, which was circulated at both the Ramsar and INTECOl meetings. Thanks to Pierre Horwitz for coordinating this task. We updated our membership brochure, and have just published another excellent Special Publication. Mass media contacts have been expanded, with a number of the Executive conducting radio interviews with the ABC. Finally, we have commenced a more intense interaction with State and Federal politicians to raise further the profile of the Society.

Third, we must consider where we go to in the future as a Society. The informal workshop held on Monday afternoon is a first step in the ASL redefining its position in the scientific-political-social realms: I invite you to participate in this process of our developing a new and robust future. But we must do this without jeopardising our traditional strengths: our strong student involvement and our excellent history in providing a nursery-ground in which students can air their work in a critical but supportive environment.

I'd like to finish this address by thanking again the Society for the support it has given me over the past year.

Paul I Boon
President 95/96

TREASURERS REPORT

AUSTRALIAN SOCIETY FOR LIMNOLOGY INC

PROFIT AND LOSS STATEMENT FOR YEAR ENDED 31 DECEMBER 1995

	1995 $	1994 $
INCOME		
Bank Interest	2,912	1,284
Congress -1995	66,942	1,000
Congress - net surplus 1994	-	3,707
CSIRO Journals	3,675	7,315
Publication Inserts	-	100
Special Publications	585	690
Subscriptions - Members	9,840	12,373
- Students	1,020	1,175
- Institutions	340	865
- Life	750	750
TOTAL INCOME	86,064	29,258
EXPENSES		
Audit Fees	565	500
Bank Charges	177	59
Bio- Diversity Contribution	-	1,000
Conference Telephone Calls	458	1,335
Congress -1995	59,791	1,500
- Students Travel Award	3,050	-
- Students Prize	550	-
Congress Travel 1994	-	1,920
Congress - 1993	-	1,011
CSIRO Journals	5,395	5,370
Depreciation	529	-
Honorarium	2,000	1,000
Insurance - Computer	200	-
Membership Directory	1,283	-
Miscellaneous	32	49
Newsletter/Teleconference	6,272	10,089
Outside Support	-	100
Petty Cash	50	150
Special Publications	45	-
Stationery/Printing/Office Supplies/Postage	365	1,235
Subscriptions - FASTS	3,661	1,652
Victoria Chapter	193	-
TOTAL EXPENSES	84,615	26,970
NET SURPLUS FOR YEAR	$ 1,449	$ 2,288

AUSTRALIAN SOCIETY FOR LIMNOLOGY INC

BALANCE SHEET AS AT 31 DECEMBER 1995

	1995 $	1994 $
MEMBERS FUNDS		
Retained Surplus	56,808	55,359
Represented by:		
CURRENT ASSETS		
General Bank Account	11,592	17,142
A.N.Z. Trustees Common Fund V2 Plus	36,811	34,622
N.A.B. Deposit at call	3,649	3,595
TOTAL CURRENT ASSETS	52,052	55,359
NON CURRENT ASSETS		
Office Equipment	5,285	-
less Provision for Depreciation	529	-
TOTAL NON CURRENT ASSETS	4,757	-
TOTAL ASSETS	56,808	55,359

WORKSHOP ON THE FUTURE OF ASL

On the Monday afternoon of the Berri Congress, we held an informal workshop on the financial and political environment facing our Society and its likely implications for the future of ASL.

The Executive met after the workshop to place into action some of the ideas presented on that afternoon. If you would like to be involved in the committee-cum-collective that will try to develop these ideas and thus to advance the ASL over the next 5-odd years, please let me know.

Paul I Boon

THE FUTURE OF ASL

At the AGM in Berri we accepted the following motion:

ASL forms a policy sub-group to investigate mechanisms (protocols) to:

- *raise the profile of ASL with governmental policy makers and advisory panels etc*
- *deal with external requests for the provision of advice on issues*
- *provide interactive fora to debate conservation issues within ASL*
- *issue ASL policy statements on selected issues*
- *maintain the current strengths of ASL*

And to present options to the Executive and the 1997 AGM.

These issues will be addressed by the Executive members plus Peter Gerhke, Peter Schultz, Jane Roberts, Deborah Nias, Ian Campbell, Leon Barmuta and Margaret Brock. Please contact me if you would like to be involved in the initial drafting stage. The draft from this group will be circulated for comment from all members via the ASL News Group and Newsletter.

Max Finlayson
President 96/97

STUDENT PRIZE REPORT

The standard of posters and oral presentations was as ever very high and the judges which to congratulate all presenters. However, there can only be one winner for each prize (and a few runners up). The winners and runners-up were:

Poster Prize

Winner: **Mat Allanson** for his poster *Regional assessment of water quality using a predictive model: south coast of New South Wales*

Runner-up: **Chris Williams**

The judges of the poster prize would also like to encourage more students to present posters, particularly if they are at early stages of their projects. A relatively small number of posters were presented and they are an excellent of getting project feed back from a wide audience.

Honours Oral Presentation

Winner: **Danielle Warfe** for her paper *Beetles, bites and macrophytes*

Runners-up: **Michelle Richter**
Brendon McKie

Postgraduate Oral Presentation

Winner: **Michael Douglas** for his paper *The impact of fire management on tropical stream invertebrates*

Runners-up: Deb Nias
Kay Morris
Marcus Cooling

Congratulations to you all.

Dr Gerry Closs
Student Prize Co-ordinator

DOOR PRIZE REPORT

For the uninitiated (i.e. those who generally don't attend the Annual General Meeting), the Door Prize is a much sought after annual award presented to the person, species or object that has contributed the most to ASL culture during the conference. That is, the person, species or object that will long be remembered associated with the Berri conference long after anything associated with p=0.05, semi-strong hybrid multidimensional scaling, Monitoring River Health Initiatives, or e-mail has passed from your memory.

The prize has been presented for many years now. It began in about 1984 with an oven door mysteriously transported to the Mt. Gambier conference in the back of Sam Lakes station wagon (time to let the cat out of the bag - it was your students what done it, Sam). Not wanting to carry it all the way home, the obvious choice was to offload it onto some unsuspecting recipient. And hence the Door Prize was born.

The Prize is judged by a Door Prize Collective (no Committees for us) - a mysterious group of floating, rarely sober ASL members (i.e. any-one who wants to nominate something). As usual, this year has produced nominations in a wide variety of categories. And so to the nominations:

In the It Pays To Advertise category, the nomination goes to **Phil Suter** for prefacing every question with "If you come to my talk at 5:10 in Session A.....".

In the Presentation Is Better than Content (previously known as the PowerPoint Award) category, **Ivor Growns** was an early leader for his opening title overhead. Unfortunately, Ivor was eliminated from the final prize because it appears that "Last Minute Hastily Produced Illegible Scrawl" is not actually listed as one of the fonts in PowerPoint.

The nomination had to go, of course, to **Keith Walker** for his Murray River presentation. PowerPoint programming above and beyond the call of human decency. Transition heaven. One wonders how much time was spent learning the difference between an "Uncover Left-Down" and a "Split Vertical Out", when he should have been .... Anyway, Kieth was disqualified from the final prize because the PowerPoint style actually added information to the presentation. Obviously Kieth has discovered a major bug in the program and the Collective urges him to notify Microsoft immediately so that the bug that adds vale can be written out of the program.

The Fashion is Everything nomination was won ... yet again ... by **Pierre Horwitz**, still clinging to the idea that pyjamas is a valid form of day-wear. Come on people - get dressed next year.

The Student Encouragement nomination went clearly to **Danielle Warfe** for dropping the entire box of her slides walking into the room 15 minutes before her talk. The look

of horror on her face was just the thing that Alfred Hitchcock spent an entire career trying to get out of his audience. Well done Danielle, but you blew your chance at the big one by picking up the slides, calmly resorting them and giving a confident well presented talk (and winning one of the Student Prizes). Let this be a lesson to all you youngsters out there. If you're going to pick up one of the big ASL prizes, you'll have to do a lot worse than that.

The New Age Waterway Manager Nomination was taken out by **Paul Boon** for the suggestion that cutting down riparian vegetation to increase water surface wind speed and reduce stratification seemed like a good idea. Obviously, Paul hasn't been in Victoria very long. It's just those absent minded off-the-cuff remarks that get taken up as policy (like "let's have a casino..... how about a car race in a local park").

The Traditional John Hawking Nomination nominee was, again, **John Hawking** who, in Session 3C, spent the four talks, in sequence: 1) Awake, 2) Nodding, 3) Dozing and nodding, and finally 4) Sound Asleep.

And in the It May Be Good Science, But Thank You For Ruining My Day Category, **Rebecca Hewlett** was a clear winner, proving conclusively that Merri Creek in Melbourne was contaminated by human faeces, not dogs as we thought. Nice work, but I live about 150 metres from Merri Creek, I walk along the walking track often and ... shudder ... I have even waded in and looked under a few rocks ... in bare feet. Thank you very much (not!).

But there can only be one winner .... or must there be ... not necessarily. We have to say that this year was not a highlight for the collective. Where was the "fell asleep on the lawn next to the sprinkler which woke him with a blast of treated sewage in the face" (Rottnest Island); where was the "showed a photo of himself with two optic fibre light sources shining up his nostrils" (Lorne); where was the now infamous "Line Dancing" (Jenolan Caves). Nowhere to be seen. Just not good enough to be awarded a formal Door Prize this year, I'm afraid. You'll have to do worse next year.

But as the presenter, it is my prerogative to award a personal door prize. And I have taken that option. There's been a lot of talk at this conference of raising the profile of the ASL. Getting known out there in the community. Media coverage for ASL activities. Seems like a good idea, doesn't it.

But it's not a really good idea to drag me out of the poster session at 9:30 pm to meet with the local ABC reporter on 5 seconds notice;

It's not a really good idea to end up organising a pre-recorded radio interview at 7:30 am the next morning;

And it's particularly not a really good idea when the first question in this serious interview turns out to be the out-of-the-blue surprising "And tell me Tim, how did you

first get interested in freshwater ecology?" - especially when you can't remember what you did last night, let alone the motivation for a career choice 17 years ago.

So, in the just invented Thank You For Ruining My Day, But Now Revenge Is Complete and We'll Call it Square category, I give you the 1996 Berri Conference Door Prize winner - the person who organised this media circus for me - ex-ASL president **Paul Boon**. Congratulations, Paul.

Thank You.

REPORT ON THE LWRRDC-FUNDED BIOLOGICAL MANIPULATION WORKSHOP BERRI, WEDNESDAY 2 OCTOBER TO THURSDAY 3 OCTOBER 1996

ASL hosted a Workshop on Biological Manipulation, funded by LWRRDC, immediately after the Annual Scientific Congress in Berri.

The external funding provided by LWRRDC allowed us to invite three distinguished overseas speakers - Carolyn Burns from New Zealand, Brian Moss from the UK and Don McQueen from Canada - as well as three local experts - Peter Gehrke, Gary Jones and Vlad Matveev - to speak on the broad topic of biomanipulation and its potential for the control of algal (especially cyanobacterial) blooms in Australia. We used a professional facilitator, Margaret Dugdale, to control what might have become an otherwise riotous assembly.

The Workshop was very well attended, having 58 registered participants. All speakers gave outstanding presentations, and there was vigorous discussion of the pros and cons of the biomanipulation approach after each talk. The division of the participants into small subgroups to discuss individual aspects of the control of algal blooms via faunal manipulations was another productive feature of the Workshop.

I am currently writing the Final Report on the Workshop for submission to LWRRDC. If you have any comments on the event, please contact me soon. Last of all, thanks to Fran Sheldon for her usual wonderful organisational commitment, to Monika Muschal for liaising with the speakers and to Mick Bales for his inputs.

Paul I Boon

FLINDERS RANGES FIELD TRIP REPORT

Early Thursday morning, three 4wds rolled out of Berri and headed west. Our two pilots/cruise organisers were the inimitable duo of Sam (hyena) Wade and Peter (Pedro) Schultz, the scourge of every macho ungulate between Hawker and Parachilna. Communication within the convoy was required, especially as one rig did not contain a person that knew their way through the Flinders blindfolded in a snowstorm. The consensus was that flashing of previously inactive headlights be employed to signal rather than the option of switching off burning lights (Pedro didn't explain how option b would go when driving at night!).

Leaving behind the River Murray of Australia South we passed through flat farmland coloured in bright hues by flowering canola or Salvation Jane. When the roadside blooms changed to orange, and the vineyards lost their sprinklers, we made a stop. This was the Clare Valley and it was soon apparent that we were a contingent of wine lovers. Paul McEvoy was dismayed at the `closed' sign on the Wendouree gate, settling for a view of those hallowed cellars. In the crowded Sevenhill tasting room, Ivor Growns attempted to fill his glass from the spittoon. Was he looking to refresh his palate with water or did he decide that a quality assessment of the many wines on offer was best done using a rapid technique? We exercised the option of varying the trip schedule to visit more tasting rooms and push lunch back to afternoon tea.

Pushing on towards Hawker and nearing dusk, an instrument warning light appeared on the dash of Sam's troop carrier. The flashing light signal was sent to the other cars, in front, but ..... not received. After quickly sorting the problem, we rejoined the pack at the next creek crossing to view a stunning sunset. In a few more hours, Sam lead the tour through the gravel roads of the Flinders in darkness. It had been a long day, but how would leaving the main road, driving to a lookout and turning off the vehicle lights help us to regroup? (It didn't). Regrouping continued to be a difficult business throughout the tour.

Accommodation at Angorichna station shearers' quarters was comfortable and full of character. Next morning, people that had bedded down in the oldest of the old bunkhouses woke to find they had been carried metres from their beds by the Flinders mozzies. Danielle Warfe suffered most, her eyelids had swollen so much they resembled those of someone who had gone 9 rounds with Aussie Joe Bugner. Out in the field, Ivor revealed that he was also interested in the fauna beneath terrestrial rocks. Climbing the sides of Wilpena Pound and viewing the many plant species flowering provided an opportunity to work off calories accumulated at the Berri Hotel. After lunch we found an answer to David Mitchell's Jolly award address question: When is a river not a river? ..... In the Flinders Ranges, where roads pass through stream beds for hundreds of metres. Views of a ghost town or of yellow-footed rock wallabies were the evening tour options. As we drove west from the ranges to the plain, Mars rose towards the south, and Venus towards the north (or where they guidepost reflectors?)

A wonderful meal was provided at the Parachilna Hotel, a pub of many names. As movies were shown under the stars out the front, we dined inside on some wonderful bush tucker. Later at the station guitars hummed in a diversity of musical styles and the produce of Clare was once again enjoyed. Our final night in the bush was spent around the barbecue after a day of inspecting springs, gorges and aboriginal rock carvings. Pedro and Sam entertained the group with different slants on a story of bush tucker they had acquired and shared on a previous trip to the Flinders.

Faced with a helluva drive and then some, the Melbourne rig headed off early on the final morning. The rest of us had time to see high and low nutrient springs, sand dunes, fossils and cold chops before heading back to Adelaide. Many thanks to Sam, Peter and all fellow participants.

Paul McEvoy

FOR SALE

ASL 96 ABSTRACTS

only

$10

Email: fsheldon@zoology.adelaide.edu.au
Fax: 08-8303 4364 (Attention Fran Sheldon)

URBAN WASTEWATER MANAGEMENT WORKSHOP AND CONSTRUCTED WETLAND TOUR

Kerri Muller and Michelle Bald

As a post-Berri event we organised a tour of constructed wetlands in and around Adelaide which concluded with a half-day workshop at McLaren's on the Lake (Oh! and a side-jaunt to Hugo Wineries, YUM, YUM!!). First, we visited The Paddocks, Greenfields and the MFP-Barker Inlet Wetlands. These are all in similar urban/industrial catchments north of Adelaide and range in age from 20+ years to almost finished. On-site speakers gave us an excellent summary of the history and management of these wetlands which have presented a number of challenges (eg. salinity, rates of sedimentation) over the years. Highlights - Clive's hat, George identifying *Phragmites* and *Typha*, Colin the bus driver's manouvering skills, near delegate wipe-out by goods train and a few serious things. Day two, began with a tour of Minkara (flood mitigation) and Willunga Wetlands (sewage amelioration) south of Adelaide again with excellent on-site speakers. Visiting these wetlands stressed the need for active collaboration and a clear definition of purpose prior to wetland construction. Highlights - close encounter with a black snake, losing George and having to get WET (funny thing that at a wetland).

After gorging on delicacies such as Spring's Smoked Salmon (YUM, YUM!!) we heard from George Ganf (almost everything), Paul Boon (nasty and not-so-nasty bugs), Trevor Daniell (Civil and Env. Engineer - what George didn't) and Geoff Sainty (right plants- right places??) before splitting up for group discussions.

The key issues discussed at the workshop were:

- defining wetland success
- optimising particular processes (e.g. ecological and physical transformations)
- identifying potential deleterious effects

The following statements summarise the workshop discussion:

- define the required output water criteria before designing the wetland - ensure that the outputs are acheivable given the incoming water quality and variability ie. can a wetland convert sewage to drinking water in one easy step??
- the 'success' of a wetland will vary in time and space
- monitoring is essential and must allow detection of stochastic events
- active management requires fine adjustment of water regime
- desirable wetland processes (examples listed below) need to be well-researched and design priority given to those which will significantly enhance the performance of a given wetland system

  sedimentation of incoming particles
  nutrient transformations - sinks and sources
  disease control
  maintenance of sink states
  establishment of appropriate flora
  maintenance/establishment of active microflora
  root zone exposure

ANNOUNCEMENTS

AUSTRALIAN SOCIETY FOR LIMNOLOGY, SPECIAL PUBLICATION NO 11:

Catalogue of the Australian Mayflies, Recent and Fossil (Insecta: Ephemeroptera) by Michael D.Hubbard, Florida A&M University, and Ian C.Campbell, Monash University; pp43.

This catalogue has just been published (July 1996). One copy is available free to each member of the ASL. Extra copies are $20 each. If you want a copy please fill out the form below. Those members attending the ASL Congress at Berri will receive their copy at this meeting.

Name:

Address:

Number of extra copies:

Amount enclosed: $

Please send to:

Dr R.Marchant
ASL Secretary
71 Victoria Crescent
Abbotsford VIC 3067

(Cheques or money orders should be made payable to the Australian Society for Limnology)

Aquatic Ecology Postgraduate Workshop

17th - 19th March 1997

The 1997 AEPGWS will:

- provide an informal forum for postgrads in aquatic ecology research to discuss their work in the absence of supervisors
- be an opportunity for feedback or guidance with specific problems from other postgrad students
- hold a symposium session, with guest speakers, on a topic relevant to career propects for aquatic ecology postgrads

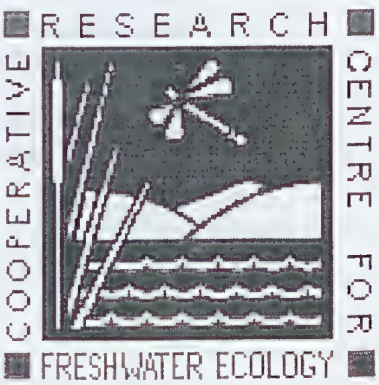
Venue: Queenscliff, Victoria
Cost: approx. $100 including food and accommodation

Please register your interest by contacting:

- **Alecia Bellgrove** or **Melissa Wheatley**
  DEEB, Monash University, Clayton, Vic 3168
- **Patrick Driver** or **Louisa Oswald**
  CRC for Freshwater Ecology, University of Canberra
  PO Box 1, Belconnen, ACT 2616

- or email:
  AEPGWS@lake.canberra.edu.au

CRCFE students will be supported by the CRCFE



NEWS FROM FASTS

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FASTS JULY CIRCULAR.

The Prime Minister has invited FASTS to join his Science and Engineering Council (PMSEC), where the voice of 40,000 working scientists will be heard at the highest levels of policy formulation.

His letter (in part) reads:

"I am writing to invite you, as President of the Australian Scientific and Technological Societies, to become an ex-officio member of my Science and Engineering Council. The Government's science, engineering and technology policy includes an important role for the Council in enabling leaders of the science community to bring to the Government's attention their views on issues and priorities in science, technology and engineering. I see your Federation as a key contributor to this role."

The letter continues with an invitation to make a presentation to PMSEC on Sept 13, and contains background on the Council and a list of members.

There are 20 members of PMSEC: the Prime Minister, the Minister for Science and Technology, 6 ex-officio members and 12 members appointed in their personal capacity.

The ex-officio members are:

The Chief Scientist
Dr Don Williams (Chair of ASTEC)
Sir Gus Nossal (President of AAS)
Sir Arvi Parbo (President AATSE)
Professor Fay Gale (President AV-CC)
Dr Joe Baker (President FASTS)

The invitation to join FASTS is recognition of the value of the opinions of grass-roots scientists and technologists. I believe that FASTS will add a fresh and vital voice to PMSEC deliberations.

Your ideas on issues to raise at PMSEC will always be welcome. Please keep this fact in mind as you encounter challenges, opportunities and particularly examples where scientific results have helped society.

1. In Canberra, the Budget approaches. It will be brought down on Tuesday August 20, and there are signs of nervousness in all organisations which depend on government funding.
The Government seems to know what it does NOT want - witness the ruthless axing of the Syndicate Research Scheme and Department of Regional Development - but is not exhibiting the same signs of certainty in what it wants to erect in place of these programs.
The pressure to come up with new policy is enormous. AusIndustry was given nine days to frame a non-tax based replacement for the Syndicate Research Scheme, and this period had to include consultation with

industry and financial and research organisations!
FASTS was asked to suggest measures, and made both a written submission and attended a meeting in Canberra with 120 other groups hastily convened to advise the Department.
Graham Johnston (the FASTS' representative, and our immediate Past-President) used the Industry section in the FASTS Policy Document as a source of ideas; but some of the plenary speakers at this meeting had less than an hour to assemble their thoughts. The meeting had useful outcomes, but there were rumblings of "policy-making on the run!".

2. Last week Toiss Gascoigne and I met six senior officers of the Department of Industry Science and Technology (DIST) to discuss the FASTS' Policy Document. It was a productive two hour meeting, and provided useful insights into how FASTS can interact best with the bureaucracy.
These "nitty-gritty" meetings to look at both the philosophy and detail of policy are an essential support to our discussions with Ministers. We have approached other Departments such as DEETYA (Employment, Education and Training and Youth Affairs) for similar sessions.
3. I have continued to maintain close contact with Minister McGauran, and discussed a number of the issues with him last week. The Minister asked for the substance of these discussions to kept confidential, but they included matters such as: FASTS' appointment to PMSEC; the appointment of the Chief Scientist; impacts of Budget proposals on Australia's long-term programs, and the adverse impact of undermining the Regional development Program.

4. FASTS has been making useful contacts with member Societies. Toss Gascoigne spoke to a group at the Statistical Society Conference in Sydney and delivered a paper to the Ecological Society in Townsville.
He also discussed university funding and the career opportunities for young scientists with Carolyn Allport and Julie Wells of the National Tertiary Education Union; attended the opening of the new Aust Science Teachers Association office by Minister McGauran; and discussed FASTS matters with Chris Crossland of the Coral Reef Society and Helene Marsh of the Mammal Society.
I talked to ASTA President Debbie Smith at a breakfast meeting, and gave a keynote presentation "The challenges to Chemistry in understanding the World's Oceans and their biota" at a Conference on Chemical Education in Brisbane.
I was also a panellist for the discussion "Is there a new set of competencies needed for the graduating chemist?"; and had useful meetings with Barry Noller (President RACI) and Dr Susan Cumming (Executive Director RACI) at this Conference.
These meetings are the most valuable way of gaining an understanding of the concerns of Member Societies. The FASTS' travel budget is nil but we have found other ways to travel to meet with groups across Australia. Please let us know if you believe a FASTS' presence at one of your meetings or activities would be of value.

5. ANZAAS Congress in Canberra in October has taken up a FASTS' suggestion to devote Day 3 to science policy. I am chairing the final plenary session, featuring an address by Minister McGauran.

6. Accounts have now been mailed to all FASTS Corporate, Associate and Observer Members. Please pay these promptly, and direct questions to the Treasurer Marion Burgess (m-burgess@adfa.oz.au) or Executive Director Toss Gascoigne (fasts@anu.edu.au)
Some Member Societies have been printing the Monthly Circular in their

newsletters, while others pass it round by email. You might consider these ways of keeping your membership informed of what FASTS is doing.

7. FASTS gained good media coverage over the month with articles in the Canberra Times, Lab News, R&D Review, the Financial Review and the Age.
Headlines included:
"Sums done, maths doesn't add up"
"Academics warn of damaging decline"
"FASTS policy calls for option to R&D tax concession"
"Secondary science teaching in need of overhaul"
"'Backyard rorts' blamed for loss of tax concession
"Anger over dumping of scheme"
We also issued a media release on the demise of the Syndicate Research
Scheme ("R&D tax breaks - there's a better way").

8. November Council: The FASTS Board will shortly decide the agenda for the Council meeting on November 21, and all Member Societies will be invited to attend. One feature will be a repeat of last year's informal dinner at a "cheap and cheerful" local restaurant, which proved a great way of bringing members, journalists, politicians and policy makers together, even if everyone had to pay their own way. Member Societies are asked to consider nominees for the FASTS Executive. Of particular interest are the positions of President-elect and Treasurer, with current Treasurer Marion Burgess having announced her intention to step down.

9. Our attention has been drawn to the fact that Minister McGauran has received one and one only letter relating to science communication since taking office. This is not much ammunition to take to his senior minister or to the party room.
For those who would like to strengthen his position in Cabinet discussions, write to:
The Honourable P McGauran MP
Minister for Science and Technology
Parliament House Capital Hill Canberra 2600
Fax 06 2734150

10. A National Science Forum "How Science fared in the Budget" will be held on August 26 at CSIRO Limestone Ave in Canberra. The three speakers are the Minister for Science and Technology (Peter McGauran), the Opposition spokesperson (Martyn Evans), and Democrat spokesperson (Natasha Stott-Despoya). Cost is $10, book through Wendy Parsons on (06) 276 6615.

11. The NTEU and students' associations have organised a forum on maintaining government funding for higher education. Speakers include Robyn Williams (Science broadcaster), Helen Razer (2JJJ announcer), Keith Daniel (Corporate Technical Director, Nucleus Ltd), and Eva Cox (1995 Boyer Lecturer).
Monday 5 August 12.15pm SHARP, at Guthrie Lecture Theatre, Faculty of Design and Architecture Building, Level 3, University of Technology, Harris Street Sydney.

FASTS August Circular

The impact of the Budget on S&T is still being weighed up. In a year when "a good result" was measured in terms of how little the cuts were, S&T probably came out as well as any other sector.

Minister Peter McGauran seems to have done well in protecting his territory. The cuts that have been made in the general area of S&T largely fell in the portfolios of Education Minister Amanda Vanstone, and Industry Minister John Moore.

The full effect of Budgetary measures will become clearer when we see how the universities cope with life in Poverty Street, and industry responds to the huge cuts in incentives to undertake R&D.

The failure of Government to support overdue salary increases in universities is a national disgrace.

The effect on the CRCs is uncertain. Although direct funding was increased, the CRCs are sensitive to the climate in universities and industry. It is all part of a complex interlinked science and technology domino effect in Australia.

One unsavoury aspect of the Budget was Treasurer Peter Costello's statement that CSIRO was to receive an extra $115 million. This was pure "pea and thimble" stuff - CSIRO has to pay the whole amount back to Government through asset sales and a new "efficiency dividend" applied to research work.

But ANSTO and AIMS fared worse.

1. Prime Minister's Science and Engineering Council
FASTS addresses the Prime Minister directly at PMSEC on September 13, and the content of our message has been carefully considered. The suggestions which came in from Member Societies were a most useful contribution to this process. Thank you!
The FASTS' submission will be available on our WWW site straight after the meeting.

2. FASTS' Council 1996
Member Societies will be asked to nominate their choices for a FASTS "Top Ten Policies" ahead of the meeting of Council on November 21 this year, and these will be debated at Council. This will help identify the issues we pursue most vigorously.
Members should be thinking about nominating a representative, and what issues they want to raise at the meeting at the Academy of Science in Canberra. A more formal letter to all Member Societies about Council is currently being prepared.

3. Nominations for President-elect
Who should be the next President? The Board elects the President-elect on November 22. Ideally this person is a working scientist, well-respected professionally, with sufficient time to make an impact, and enough presence to address the Prime Minister and his colleagues confidently on S&T matters.
The President-elect serves in that role for one year before becoming President in November 1997. No previous FASTS' experience is necessary.

4. Nominations for the Australian Research Council
FASTS has been invited by Professor Max Brennan to nominate candidates for the ARC. This request has been relayed to all Presidents of Member Societies, and several names have already been forwarded to us.

5. Chief scientist
Michael Pitman is still acting in this position, but the process of appointing a successor is warming up. Names are being considered and a decision is expected by the end of the year. FASTS's opinion will be sought - the consultative process is not complete.

6. Career prospects for young research scientists
This issue is bubbling to the surface, as more young scientists wonder why they ever bothered, when they discover the unrewarding salaries and employment conditions on offer. And this after 10 years

hard work through degrees and post-doc experience!
FASTS has been discussing this issue with a number of Members and allied groups, and a concerted campaign is being planned.

7. One day forum on Education
FASTS will run a one day, high profile forum at the Academy dome on Nov 20th (the day before Council). The aim is to highlight the parlous state of mathematics and science education, and to demonstrate possible solutions.
The Forum hopes to involve other key players such as the Science Academies, the Institution of Engineers, the University Deans of science and education, and teacher groups. The Board has asked Jan Thomas (President of the Australian Mathematical Sciences Council) to coordinate the day.

8. Contacts with other parties
FASTS has had useful discussions with the Opposition Shadow Minister (Martyn Evans) and the office of the Democrat spokesperson on S&T, Natasha Stott Despoya.

9. Contact addresses, subscriptions and newsletters
Thanks to all those Members who have responded to our request for early payment of subscriptions, and return of contact addresses.
We are always pleased to receive your Society newsletter, especially as so many of them are now carrying news of FASTS activities.

10. FASTS's media releases
On the Budget - "Science still afloat. (But where's the Vision?)"
On the Budget - "Science peak bodies on Budget"
On Universities - "University cuts affect science. FASTS: All the wrong signals"
On PMSEC - "FASTS invited to join PM's Science Council. A key contributor"

Headlines of newspaper articles included:
"Coalition bid to end research rorts faces fight"
"FASTS warning on cuts to universities"
"Australian investors lose tax incentives on innovation"
"Science both a winner and a loser in funding"
"Australian universities face disruptive choices"

A discouraging media note are funding threats to Quantum and the ABC Radio Science Unit, and a fall-off in S&T coverage by the Australian newspaper since Julian Cribb left. But promising signs: FASTS is delighted to see the science journal "Nature" opening an office in Melbourne, with Peter Pockley the Australian Correspondent.
Minister Peter McGauran appears on "Meet the Press" Sunday Sept 6, at about 8 am on Channel Ten.
Please respond to items 1, 2 and 3. Also you might consider and pass on to me the issues you want raised at the ANZAAS forum I am chairing on Thursday October 3.

A Letter from Joe Baker FASTS President:

On Friday September 13 1996, I participated in the first meeting of PMSEC under the Howard Government. (The agenda for the meeting is attached)

Prime Minister, John Howard chaired the entire meeting (except for one 10 minute period when he was called away). He showed interest throughout and was enthusiastic about what he had learned.

Our FASTS weekly report of 13 September, from Toss Gascoigne,

illustrated the significant attendance of Ministers and members of Parliament.

I do believe there is a distinctive role for FASTS to play in PMSEC. We bring an Australia-wide geographic perspective and our member Societies cover a wide range of disciplines. The members of the Societies cover an even wider range of types of professional employment. We have the potential to continue to illustrate the significance of Science and Technology to the sustainable well-being of Australia and of its people.

Many politicians do not consciously appreciate the good things from science and technology even though they use and benefit from them in their everyday activities. Rather they see us as communicators of problems, of costly needs (education, training, job creation etc.) and as generators of problems - CFEs, chlorinated hydrocarbons, radioactive substances etc.

We have to regularly publicize the good things coming from Science and Technology throughout Australia, especially from Australian scientists and technologists, as distinct from overseas workers.

Some people may believe that I put too much emphasis on the value of FASTS being on PMSEC. In last week's meeting there were, in the morning session, the Prime Minister, 6 Ministers and "Member" 15 Parliamentarians. In the afternoon there was one additional Minister.

They hear the debate; they become directly aware of FASTS. Since last Friday I have had two requests for meetings with Members and they would not have arisen except for the awareness raised on Friday 13th September.

The next PMSEC meeting will be in March 1997 and then the next in September that year. We have the opportunity to suggest items for each of these meetings - and work has already commenced to plan the March meeting: What do you consider should be the key issues to raise? They should be of national relevance.(We will discuss priority items at the November Council meeting.)

Let me return to the need for good news stories from Australian scientists and technologists.

I believe that such stories should be a regular feature of your individual newsletters, and I would really love to see a regular column in every Australian Newspaper on such topics. Could you identify at least one - but preferably several, member(s) of your Society, who would act to gather such information and develop the communication links with the public and the media?

It is clear that one of the greatest challenges in this age of sophisticated technology is to communicate effectively and efficiently. I believe we can achieve it best by "starting local", starting within individual scientific Society groupings, and building to regional, State, Territory, and National levels.

I am confident that FASTS could compile an accessible central reference data-base of all such items.

Best wishes for ongoing success in your scientific and technological endeavours.

Yours sincerely

Joe Baker
President, 23.09.96

CONFERENCE REPORTS

SECOND CONFERENCE OF THE INTERNATIONAV L RESEARCH GROUP ON CHAROPHYTES UNIVERSITY OF WISCONSIN, MADISON, USA.

Michelle Casanova
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The conference was held at the lake-side campus of University of Wisconsin, at Madison. It was suggested to me that the beer and bratwurst culture of that region of Wisconsin would be friendly to Australians, and this proved to be so. The area adjacent to campus provided a variety of eating and drinking establishments that oiled the conversational wheels of the 40 or so international participants at the conference. About half of the speakers were concerned with fossil charophytes (represented for the most part by 'gyrogonites': the fossilised remains of the oospores), and the other half were concerned with aspects of the genetics, physiology, biogeography, ecology and evolution of extant charophytes. It was a great mix. Very few of the 20 or so speakers stuck to the 20 minutes each allotted them, but nobody was concerned. We were all there to talk about or listen to talks about charophytes, and some of the post-paper discussions were extremely wide-ranging. All of the papers were in English and speakers were from France, Spain, Switzerland, Belgium, India, USA, Canada, Holland, China and Germany. Australia was represented by me and Jacob John.

About half of the participants also attended the post-conference tour of fossil and extant charophytes of Iowa. It was a thrill for me to collect the remains of 400 million year old charophytes, with oospores that spiral the other way, among fossils of brachiopods, molluscs, echinoderms and bryozoans. My cases were heavier returning to Australia than when I left.

Charophytes have a fairly continuous fossil record and present-day distribution patterns can tell us a lot about the environment in the past (from the Devonian to Recent times). This is not to imply that all questions have been answered. Why are fossil charophytes in marine sediments when the extant charophytes rarely tolerate such conditions? Did monoecy evolve from dioecy or the other way around? Do herbivores control the distribution of extant charophytes? All these questions generated plenty of discussion.

We collected living charophytes from Lake Okoboji, Jackpot Ponds and Silver Lake Fen. Usually on a field trip I am the only one peeling off shoes and socks to wade in for charophytes, but on the second part of the field trip everyone was into it! It was a pleasure to be involved with such an enthusiastic crowd of charophytologists. Where

else would people cheer when *Chara contraria* was brought up on a grapple from 4 m deep?

It was with a sense of sadness that we all parted company at the end of the field trip. I don't expect to have such a good time at a conference until the next meeting of the IRGC in China in 2000.

FLUVIAL ADVENTURES, OR 192 HOURS IN MONTANA

Paul I Boon
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Last June I attended the 44th Annual Meeting of the North American Benthological Society, held in Kalispell, Montana, USA. I saw some other Aussies there (Andrew Boulton, Ian Campbell, Jenny Davis, Richard Norris, Brad Pusey *et al.*) and maybe some will report back to ASL on the conference. Undoubtedly we will have different stories to tell, and here's mine.

I went to the NABS meeting for three reasons: first, to see Montana; second, to observe the American in his native habitat; and third, to present to the Americans our work on methane cycling in wetlands. The excruciating trip to Kalispell was relieved by the airline (an American one) showing a film of blood, gore, murder and ghastly acting on the 13-hour leg between Sydney and San Francisco. This cinematic wonder also featured a plane crash, which I thought was *verboten* as a form of entertainment during air travel. This experience proved to be my first critical moment in defining the American culture. San Francisco was OK (well, better than Los Angeles; but, then again, so is Port Moresby) if you don't mind all the beggars. At San Francisco it came as a shock to me to see a sign inside the taxi asking politely for passengers to hand over their pistols and concealed firearms. With some trepidation, I passed over my trusty Walther 9 mm. Critical moments in defining a culture, # 2.

The scenery on the flight from San Francisco to Kalispell (via Salt Lake City) was spectacular, even if the plane was an old Boeing 727, the likes of which haven't flown in Australia for decades, and which had me constantly thinking about the age and condition of the rivets holding the old girl together. One good thing about airtravel in the USA was the skill of the pilots; they landed their monstrous (747-400) or aged (727) jets with a delicacy that seems to evade most pilots in Australia. I sometimes wonder whether Aussie pilots have the idea that any landing you can walk away from is a good one.

Kalispell is located between gently rolling hills (much like those of north-eastern Victoria) to one side, and massive craggy mountains reaching 11,000 feet to the other. Kalispell's main street was uninspiring, a bit like Wodonga only bigger and worse. Having a day to waste before the conference started, I walked around the town for the afternoon. Kalispell's suburbs were much like a scene from *Leave it to Beaver*, with pretty wooden houses, immaculate lawns, huge pickups in the driveways, and a cool canopy of green trees lining the streets. Cute little squirrels scampered up trees, and looked down at you with big brown eyes. Then I came across a local lad sitting on the verandah of the computer shop, dropping cartridges into his revolver and spinning the cylinder with his thumb, the barrel pointed skywards. Another huge fellow, ambling down the side of the house-shop, was carting around a 12 gauge shotgun. I thought I'd

stumbled into William Blake's town of Machine from *Dead Man*. I wouldn't want to complain to the gunslinger owner that the monitor on my computer was fuzzy and should be replaced under warranty, or that the hard disk was playing up. Critical moments in defining a culture, # 3.

Then I moseyed into Kalispell's few music shops and second-hand dealers, hoping to find a National Tricone for $100 (Russ Shiel and Brad Pusey will probably be the only people to whom this wish has any significance), but was sorely disappointed at my lack of success. One lovely aspect of Kalispell was the courtesy of the drivers, both to each other and to the few pedestrians about. Compared with Melbourne's crazed idiots behind the wheel, the Montanans were models of responsibility. It may have been, of course, that they were totally unused to anyone who actually walked anywhere.

Eventually, the conference started. It was run efficiently, but the usual problem that the rooms were sometimes too small to fit all the bodies who wanted to cram into them. But at least the slide projectors rarely malfunctioned: three cheers for American technology. The talks covered an incredible diversity of topics, from day-long sessions on DOC to other sessions devoted entirely to zebra mussels. A certain faddishness was obvious, with the hyporheos obviously being a topic of current interest. That said, though, it was gratifying to see an emphasis on community and ecosystem studies, instead of the limited population studies that feature so prominently in Australian work. The presentations were uniformly of a high standard, with none of the awful clangers that enlighten some of ASL's meetings. But I wonder whether this uniformity displaced any hope for the maverick talk, in which a shoddy presentation accompanied an inspired piece of work. For all their professionalism, few talks had the humour, irony or self depreciation that is so common in ASL talks. Of the Aussie presentations, I saw only Andrew Boulton's and Ian Campbell's: both could stand their ground with the American ones, but had the added benefit of tonnes of Aussie cynicism.

The real business was got down to after the formal sessions, when we met for dinner at the end of each day. I caught up with lots of colleagues and friends, including Doug Fiebig from Schlitz and Kiko Sabatier from Barcelona. Rick Edwards and I spent an evening discussing mid-life crises and the joys of traditional wooden boats, over Sambucas and swordfish steaks that probably gave us our annual mercury dose in one sitting. What a loss it was to Australian limnology when Rick returned to the USA! We could make Rick's heart fly if ASL members were to send him recipes for caramel slices, as such delicacies are unavailable in America and he misses them dearly.

The topic of food presents me with a good excuse with which to inflict on you more of my observations of the American in his native habitat. On the whole, breakfasts were 60 % fat and 40 % refined sugar. Dinners were 80 % protein (in the form of large lumps of dead cow) and 20 % fat. I guess that's what you call a balanced diet. Mind you, it's enormously difficult to take seriously a cuisine in which the butter is white and the cheese orange. You didn't order food by the course in Montana, you ordered it by the cubic metre. The steaks, which featured prominently in all meals, were so large

that they oozed off the plate, sometimes even off the table, like some grotesque Dali-like watch. I had the choice of 9 oz, 16 oz and 22 oz steaks at the Outlaw Inn (the site of the NABS meeting) and I thought that this was frightening enough until I visited an adjacent "restaurant" (I use the term loosely), where I was confronted with steaks that weighed in at 37 oz. That's about a kilogram. Next time you're at the butcher, see just how big a kilogram of dead cow really is. Then think about eating it at the end of a day, when you've already been filled with a breakfast of eggs and muffins and hash browns and a lunch of turkey and chips and salads. We thought that consuming such a dose of protein in one meal would more than likely give you terminal kidney damage, as your poor nephrons tried to cope with massive nitrogen overload, and we opted instead for a wimpy 9 oz job. Critical moments in defining a culture, # 4.

Even the servings of bread were scary. At any civilised restaurant anywhere else in the world, when you order bread you get a few petite slices, perhaps garnished with garlic or herbs. Not in Montana. Here you get an entire loaf, all to yourself. Perhaps all this excess of food accounts for the peculiar body shapes I saw in America. With the exception of California, where the beach babes look as if they've just walked off a Baywatch set and have breasts like balconies, from what I could tell morbid obesity was rather common in the USA. No wonder that the biggest houses (lawyers excepted) in Kalispell seemed to be owned by the medicos, what with all that heart disease to treat and profit from. Critical moments in defining a culture, # 5..

The beverages offered me with another opportunity to look at the American diet. The beers were uniformly ghastly, even those from the microbreweries much treasured by the locals. Nothing came within cooey of a Coopers Sparkling Ale or a Cascade Premium Lager. The wines were also a disaster, and god knows I tried enough of them. Maybe it requires a palate more sophisticated than mine to fully appreciate over-oaked chardonnays loaded with residual sugar, or the delicate nuances that mercaptans give to cabernet sauvignon. How I missed the wonderful *manzanilla* of Andalucia and the *weissbeir* of Munich, not to mention the cabernet from Coonawarra or the shiraz from McLaren Vale. I'm sure that the yanks can produce passable plonk; it's just that none of it came my way.

Although the dietary aspects were rather a disaster, the trip to the USA was not a complete rightoff, as it also offered me some interesting intellectual and political insights into American life. While in Kalispell, I reread Aldo Leopold's *Sand Country Almanac* of 1949, a text that should be read by anyone even vaguely interested in environmental management. And I read for the first time Henry David Thoreau's *A week on the Concord and Merrimack Rivers* (1849) and *Walden* (1854), again two tracts essential to an understanding of modern environmental conservation. I believe that, idealy, books should be read in the country in which they are written, and this is especially so for nature books.

The radio and TV also offered interesting cultural insights. The TV in my room had 49 channels, all of them terrible. The radio was just as bad; public radio broadcasting

was an island of civilisation in an ocean of commercial inanity. It was intriguing to find in Montana a loopy right-wing radio station, that went by the name of KJJR 880. The county's conservatives, all of them schizoid, paraded on this station every night, peddling their peculiar brand of paranoia and prejudice. One presenter called Al Gore, the Vice-President, a "leftish whacko environmentalist". I guess this makes John Howard a screaming Stalinist. Universities were called "cisterns of cultural waste". Bill and Hilary Clinton were described as "Beavis and Butthead". This radio station provided me with much needed comic relief, as I waited with my chronic jet lag through the long lonely nights for the sun to rise each day. To place this radio station into context, you must remember that Montana is the place where the Unabomber was to the (anarchist) left of me, and the Freemen and the Militia of Montana to the (far) right of me. Critical moments in defining a culture, # 6. I guess that Oscar Wilde was correct when he said that American was the only country in the world that had gone from barbarism to decadence without the saving grace of an intervening period of civilization.

Anyway, I've got to go now. Somewhere in my luggage is the gun rack that I brought back from Montana. I must go to find it, as I reckon it will look just dandy across the rear window of my Subaru.....

VICTORIA FALLS CONFERENCE ON AQUATIC SYSTEMS

Fran Sheldon
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The joint Victoria Falls Conference on Aquatic Systems, the "International Symposium on Exploring the Great Lakes of the World (GLOW), Food-Web Dynamics, Health and Integrity" was held at the Elephant Hills Hotel, Victoria Falls, Zimbabwe from July 15 to July 19 1996.

The major part of the Conference was the annual congress for the Southern African Society for Aquatic Sciences and thus the conference was similar to Australia's annual ASL; although for an outsider it was held in an outstanding location. The social side of the Conference was spectacular. The Elephant Hills Hotel itself looks similar to a pile of egg cartons on top of a hill overlooking the Zambezi River and into Zambia, despite its ungainly appearance it provided a very plush venue for the Conference.

The Conference got off to a brilliant start with a fairly moving opening address by the President Jay O'Keefe. This was followed by Bryan Davies who set the scene for much of the Conference when he questioned the need for continued water resource development in South Africa and raised the issue of efficiency of water use in the urban centres of South Africa.

Papers at the Conference tended to be dominated by issues and research relating to management objectives and approaches, which is not surprising given the challenges facing the South African Water Industry. Prior to this Conference I was ready to believe that South Africa was Australia's limnological brother, given the similarities in the variability of our river systems. After sitting through the Conference and then observing a number of aquatic systems across Zimbabwe and then southern South Africa I feel the differences in the aquatic systems between the two countries are immense. I now understand why Jenny Day from the University of Cape Town was so amazed when she joined me on a field trip to the Darling River in New South Wales a few years ago.

One of the most memorable sessions was the impromptu presentation given by Bryan Davies on the impacts of the Cahora Bassa Dam on the lower Zambezi River. Cahora Bassa was constructed in the 1970's, with the gates finally closing in 1974 as the Portuguese were leaving Mozambique, its impacts on the lower Zambezi have been hidden for the past 20 years while the political side of Mozambique rumbled in turmoil. Bryan was fortunate enough to have been commissioned by the Mozambique government of the 1970's to study the lower Zambezi before the closure of Cahora Bassa. Two weeks before the Congress he returned to film the changes that have occurred in the lower Zambezi since the dams closure and his hour long presentation at the Victoria Falls Conference provided a graphic description of ecosystem change. The lower Zambezi was once a productive system where the people relied and lived

with the seasonal flood pulse. The lower Zambezi of the 1990's is a highly stable system, which has been denied a flood for over 20 years, large permanent islands have formed where once there was moving fluvial sediments and the once nomadic peoples of the floodplain have for over a generation been stationary. The final irony on the Cahora Bassa story was that the dam is next to useless. Owing to war and political turmoil it has never, in its 20 year life, functioned as it was designed, it produces next to no electricity and its only function to date has been to prevent the annual flooding of lower Zambezi.

No report on a conference at Victoria Falls would be complete without the adrenalin rush which was enjoyed by Peter Davies, Nick Schofield and Chris Gippel who white water rafted the Zambezi below Victoria Falls. The adrenalin hero medal, however, was finally won by Chris Gippel who launched himself off the Victoria Falls Bridge towards the Zambezi below on the worlds longest Bungi Jump.

Oh, and not to forget the social side of the Conference: there was a Shebeen Evening with traditional Dance and some delicious traditional food; a Sunset Booze Cruise on the Upper Zambezi complete with sunset, nibbles and free booze and a tour of the Victoria Falls National Park.

Conference Reports Wanted

Please send reports from the following conferences (and any others) for the December Issue of the ASL Newsletter!!!!:

- INTECOL V, Perth 1996
- River Restoration, Denmark, 1996
- ASL, Berri, 1996

CONFERENCE CAPERS

AUSTRALIA 1997

- **Ecology of Estuaries and Soft Sediment Habitats**, 4-7 February 1997, Warrnambool, Victoria. Information from Andrew Constable or Brad Mitchell, School of Aquatic Sciences and Natural Resources Management. PO Box 423, Warrnambool, Victoria, 3280. Fax: (055) 63-3462 Email: aconst@deakin.edu.au

- **Ninth Taxonomic Workshop** (Trichoptera, Ephemeroptera, Chironomidae, Plecoptera), 18-20 February 1997, Murray-Darling Freshwater Research Centre, Albury. Enquiries from John Hawking, MDFRC, PO Box 921, Albury NSW 2640. Ph: 060-582300 or Fax: 060 431626.

- **Aquatic Ecology Postgraduate Workshop**, 17-19 March 1997, Queenscliff Victoria. Details from AEPGWS@lake.canberra.edu.au *(or see under Announcements Section).*

- **Sampling Nutrients in Aquatic Ecosystems Workshop**, 21 and 22 April 1997, University of Canberra. *see advertisement under "News from the CRC's" Section*

- **Ecology Society of Australia**, 1-3 October 1997, Albury-Wodonga, Victoria. Information from Dr Nicholas Klomp. Fax: (060) 51-9897 Email: nklomp@csu.edu.au

- **Australian Society for Limnology**, *tentative* September/October 1997, somewhere in NE Victoria. (watch this space for details or try the ASL Home Page).

- **2nd International Symposium on Ecology and Engineering (ISEE)** "Enginering the Aquatic Environment" 10-12 November 1997. Venue: Fremantle, Western Australia. Jointly organised by the Centre for Water Research at The University of WA and the Coastal and Offshore Engineering Institute, Universiti Teknologi Malaysia. The focus will be on methods for the preservation, maintenance and rehabilitation of aquatic systems in the broadest sense. The organisers hope to bring together geomorphologists, chemists, biologists and engineers to find solutions through field investigations, laboratory experimentation and numerical modelling. The focus will be on process rather than socio-economic managment. Inquiries: Professor Jorg Imberger and Vicki Sly. Tel: 09-380-3911, Fax: 09-380-7115 Email: sly@cwr.uwa.edu.au; http://www.cwr.uwa.edu.au/javindex.html

OVERSEAS 1997

- **Multivariate Statistics - Complex Answers to Simple Questions?** Two day meeting December/ January 1997 under the banner of SETAC (Society of Environmental Toxicologists and Chemists) for those interested in ecotoxicology. There will be presentations of multivariate analysis of surveys, experiments and monitoring studies including a review and demonstration of current software. Contact: Dr Tim Kedwards, ZENECA Agrochemicals, Ecology and Soil Science, Jealott's Hill Research Station, Bracknell, UK RG42 6ET. Ph: 44 (0) 1344 414107, Fax: 44 (0) 1344 414124 Email: tim.kedwards@gbjha.ZENCA.com

- **North American Benthological Society**, 45th Annual Meeting, 26-30 May 1997, Southwest Texas State University, San Marco, Texas. Abstracts due by 16th December 1996. Send to: Dr Thomas L Arsuffi, Program Chair, Department of Biology - Aquatic Station, Southwest Texas State University, San Marcos, Texas 78666. Ph: (512) 245-2284 Fax: (512) 245-7919. Visit the NABS Home Page on: http://www.inhs.uiuc.edu/nabs/nabs.htm

- **The VIII International Conference on Harmful Algae**, 25-29 June 1997, Vigo, Spain. The topics of the conference will be: I. Ecology Oceanography Harmful Algae Events; II. Taxonomy; III. Toxins; IV. Management of Toxic and Harmful Algae Events; V. Pharmacological and Epidemiological Studies. The conference will comprise: i) Keynote lectures b) Oral and poster presentations; c) Round table discussions. Professor Ram¢n Margalef, from University of Barcelona (Spain) will give the opening address. The scientific sessions will be held in the Cultural Centre "Caixavigo" in Vigo. Vigo is the most populous city of Galicia (NW Spain), base of the biggest fishing fleet in Europe and a major center for aquaculture and the seafood processing industry. The official language is English, which will be used for all presentations and documentation (except the second announcement, that will be in English and Spanish). DEADLINES: Submission of abstracts: December 15, 1996; Registration: 1 March 1997; Submission of manuscripts for review: April 20, 1997; Submission of manuscripts in publication format: 31 July 1997
  Further Information and Registration forms from: Beatriz Reguera, Conference Coordinator,
  Instituto Espanol de Oceanografia, Aptdo. 1552. 36280 Vigo. SPAIN.
  Fax +34 86 492351; e-mail: insovigo@cesga.es

- **Seventh International Symposium on Regulated Streams**, 25-29 August 1997, Tennessee Valley. The theme of this SISORS III is "mamaging regulated rivers for biodiversity". Primary sessions will focus on three main topics: (1) Rehabilitation of large rivers; (2) Terrestrial and aquatic interactions; and (3) Restoration of tailwater habitats. Contributed papers on any aspect of regulated flow eceology and management are also welcome for oral or poster presentation. Abstracts (<500 words) should be submitted by 20 December 1996. Selected papers will be published in Regulated Rivers. The conference will be held at the Chattanooga

Choo-Choo Holiday Inn, Chattanooga, Tennessee, USA. Further information from Dr James B. Layzer, Tennessee Cooperative Fishery Research Unit, Tennessee Technological University, Cookeville, TN 38505, USA. Ph: 1-615-372-3094 Fax: 1-615-372-6257.

- **Seventh International Symposium on Aquatic Oligochaetes**, 18-22 August 1997, University of Maine at Presque Isle, Maine, USA. Registration forms from the organiser: Dr S.R. Gelder, University of Maine at Presque Isle, 181 Main Street, Presque Isle ME 04769-2888 USA. Fax: +207-768-9608 Email: GELDER@polaris.umpi.maine.edu

OVERSEAS 1998

- **International Association of Theoretical and Applied Limnology (SIL)**, August 1998, Dublin, Ireland. Further details soon.

ASL VOLUNTEERS

The following people have volunteered to speak as experts on behalf of the ASL. If you wish to be included on the list contact:

Dr Richard Marchant (ASL Secretary)
Email: rmarch@pioneer.mov.vic.gov.au

The following members are prepared to speak on behalf of the ASL on their area of expertise.

Name	Area of Expertise	Contact Details
Prof A. Arthington	in stream flows, ecology of exotic fishes, conservation of rare fishes.	Centre for Catchment & Instream Res, Griffith University, Natham Qld. 4111. Phone (07)275 7403 , Fax: (07)277 3759
Dr P. Boon	bacteriological issues, wetlands.	Environmental Management, Victoria University of Tech., PO Box 14428 MMC, Vic. 3000. Phone (03)9365 2214, Fax (03) 9365 2465. email:boopa@stamail1.vut.edu.au
Dr A. Boulton	intermittent streams, hyporheic zones, Flinders Ranges	Ecosystem Management, University of New England, Armidale, NSW 2351. Phone (067)733760, Fax (067)732 769 email: aboulton@metz.une.edu.au
Dr M. Brock	temporary wetlands, aquatic plants	Botany Department, University of New England, Armidale NSW 2351. Phone (067)732 578, Fax (067)733 283 email: mbrock@metz.une.edu.au
Dr S. Bunn	stream ecology, ecology of riparian zones, biomonitoring	Faculty of Environmental Sciences, Griffith University, Nathan, Qld 4111. Phone (07)8757 407, Fax (07)875 7459, email: s.bunn@ens.gu.edu.au
Dr G. Closs	ecology and conservation of freshwater fish, upper Murray River	Environmental Management & Ecology, LaTrobe University, PO Box 963, Wodonga, Vic. 3689 Phone (060)583873 ,Fax:(060)583888 email:gcloss@awc-net.latrobe.edu.au
Dr T. Entwisle	taxonomy and ecology of freshwater macroalgae	National Herbarium of Victoria, Birdwood Ave, South Yarra, Vic. 3141. Phone (03)96552313, Fax (03)9655 2350 email: Entwisle@botany.unimelb.edu.au
Dr M. Finlayson	wetlands, Ramsar convention	Alligator Rivers Region, Office of Supervising Sci, Post Office, Jabiru, NT 0886 Phone (089)799 756, Fax(089)792 499 email:masf@eriss.erin.gov.au
Dr T. Grant	platypus biology	Biological Science, University of NSW, PO Box 502, Cronulla, NSW 2230
K. Hortle	impact of mining, impact of development in Se Asia and PNG on rivers	Environmental Management, 18 Sharrow Road, Mitcham, Vic. 3132 Phone and Fax: (03) 9872 4101

Dr P. Horwitz	conservation of freshwater invertebrates	Dept of Science, Edith Cowan University, Joondalup Drive, Joondalup, WA 6027. Phone (09)4055717, Fax: (09)300 1257 email: phorwitz@cowan.edu.au
Dr P. Humphries	fish ecology, in-stream flows	CRC Freshwater Ecology, MDFRC, PO Box 921, NSW 2640. Phone (060)43 1002, Fax:(060)43 1626 email: hump@watson.canberra.edu.au
Dr G. Jones	cyanobacterial blooms	CSIRO, PMB 3, Griffith NSW 2680. Phone (069)601563, Fax: (069)601600 email:gary@griffith.dwr.csiro.au
Dr P.S. Lake	stream ecology, conservation freshwater biota	Ecology & Evolutionary Biology, Monash University, Wellington Road, Clayton, Vic. 3168. Phone (03)9055 653, Fax:(03)9055613 email: p.s.lake@sci.monash.edu.au
Prof J. Laybourn-Parry	plankton microbial ecology, carbon cycling in lakes, Antarctic freshwater systems	Zoology Dept, LaTrobe University, Bundoora, Vic. 3083. Phone (03) 479 2278
Dr V. Matveev	plankton food webs, biomanipulation	MDFRC, PO Box 521, Albury, NSW 2640. Phone: (060) 431002, Fax: (060) 431626.
Dr R. Pearson	tropical freshwater ecology	Zoology Dept. ACTFR, James Cook, University, Townsville, Qld. 4811. Phone:(077)814 262, Fax: (077)79 6371
J. Puckridge	ecology of arid zone rivers, ecology of freshwater fish	Zoology Department, University of Adelaide, Adelaide, SA 5005. Phone (08) 3034455. Fax: (08) 303 4364
Dr N. Rea	wetland plant ecology, water regime, weeds and conservation	CSIRO Entomology, TERC, PMB44, Winellie, Darwin NT 0821 Phone (089) 221717, Fax: (089)221714, email: naomi@terc.csiro.au
Dr R. Shiel	planktonic & littoral microfauna, billabong ecology.	MDFRC, PO Box 921, NSW, 2640. Phone (060) 431002, Fax: (060) 431626
Dr L. Townley	: groundwater-surface water interaction.	CSIRO Division of Water Resources, Private Bag, Wembley, WA 6014 Phone (09)387 0329, Fax: (09)3878211
A/Prof K.F. Walker	Murray - Darling basin rivers	Zoology Dept, University of Adelaide, Adelaide, SA 5005. Phone (08)303 5595, Fax: (08) 3034364
Prof. W.D. Williams	Salt lakes	Zoology Dept, University Adelaide, Adelaide SA 5005. Phone (08)303 4455, Fax: (08) 3034364

BIBLIOGRAPHY

Please send details or copies of books, chapters, articles, periodicals, monographs, reports, newsletters, videos and CD's to Russ Shiel, MDRFC, PO Box 921, Albury, NSW 2640. Go on, do it..... see your name in print.....

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WORKSHOP PROGRAM

TUESDAY 18th FEBRUARY 1997

9.00-9.30 "Welcome" Prof Peter Cullen, Director CRCFE

Session 1 - Speaker: John Dean
9.15-10.45 "Identification of the hydrobiosid caddis fly larvae"

Session 2 - Speaker: David Cartwright
11.00-1.00 The Ecnomid, Philoptamid & Tasimiid larvae"

Session 3 - Speaker: Alice Wells
2.00-5.00 "Identification of the Hydroptilid larvae"

7.30 Evening Barbeque

WEDNESDAY 19th FEBRUARY 1997

Session 4 - Speaker: Ros St Clair
9.00-12.30 "Identification of the Philorethrid, Calamoceratid & Helicopychid larvae"

Session 5 - Speaker: Phil Suter
1.30-5.00 "Identification of the species of Baetidae (Ephemeroptera) found in flowing waters

7.30pm Dinner, Thai Lotus Restaurant, 610 Dean St, Albury

THURSDAY 20th FEBRUARY 1997

Session 6 - Speaker: Peter Cranston
9.00-12.30 Larvae of the Australian Chironomidae

Session 7 - Speaker: Cathy Yule
1.30-5.00 Plecoptera larvae from south-eastern Australia

Registration Form

1997 Taxonomic Workshop

Name:----------

Institution: ----------

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